

# WET FGD AND ID FAN & AUXILIARY POWER CONCEPTUAL DESIGN COST ESTIMATE

PREPARED FOR  
NEBRASKA PUBLIC POWER DISTRICT  
GERALD GENTLEMAN STATION, UNITS 1&2



Project No. 12681-012  
October 9, 2013

Client: NPPD  
Station: GGS Station Units 1&2  
Project No.: 12681-012



Preparer: A. Teferici  
Date: 10/09/2013

## **Table of Contents**

Basis of Estimate

Technical Basis

Estimate Summary

Estimates by Area:

- Unit 1 Absorber Area (Estimate No. 31249B)
- Unit 2 Absorber Area (Estimate No. 31252B)
- Units 1&2 Common (Estimate No. 31250B)
- Auxiliary Power and Booster ID Fans (Estimate No. 31251B)

Client: NPPD  
 Station: GGS Station Units 1&2  
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## Basis of Estimate

### General Information

Project Type - WFGD System for Gerald Gentleman Station Units 1&2  
 Type of estimate – Conceptual with +/- 20% contingency  
 Project location – Sutherland, Nebraska  
 MW rating of Unit 1 & 2: 705 & 745 MW Gross  
 Unique site issues – Existing Site  
 Contracting strategy – EPC

The cost estimates listed above are updates to the 2011 estimates to bring pricing to 2013 level. The major components of the previous capital cost consisted of equipment, field materials and supplies, direct labor, indirect field labor, and indirect construction costs. The capital cost was determined through the process of estimating the cost of equipment, components and bulk quantity. The estimate is structured using a code of account system to facilitate recognition of cost within major cost categories.

The 2011 cost estimates were conceptual in nature, and based largely on Sargent & Lundy LLC experience on similar projects. Detailed engineering was not performed to firm up the project details, and specific site characteristics were not fully analyzed. Some allowances were allocated where necessary to cover issues that are likely to arise but were not clearly quantified at that time.

### Estimate Development

The original estimates were prepared in 2008, and then updated in 2011. The scope of work for the current update remains the same from the 2011 estimate.

Listed below is a summary level (not all inclusive) scope of facilities included in the 2011 estimate and are still applicable:

- Absorber Area System for each Unit
- Reagent Prep System
- Dewatering System
- Chimney for each Unit
- ZLD System
- Reagent Handling System
- Gypsum Handling System
- Booster Fans
- New Railroad Tracks & Modifications
- Buildings
- Aux power system upgrades
- Switchyard Expansion
- Distributed Control System upgrades
- Demolition and relocation of existing facilities
- Ductwork
- Sitework
- Foundations
- General civil, structural, mechanical, electrical and I/C work

### Project Schedule

The Project Schedule is based on moving the original completion dates to December 2019 for Unit 1 and December 2020 for Unit 2.

Client: NPPD  
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## **Pricing and Quantities**

The pricing for this update is based on applying 2.5%/year escalation rate for equipment. S&L has used current commodity pricing for materials except for aluminum and copper which were escalated at 2.5% per year from 2009 to 2013. The data used to develop the 2011 estimates was based on using material and equipment types and sizes typically used in a power plant.

Major equipment prices for the 2011 estimates were based on vendor and client furnished budget cost information. They included the following:

- Wet Limestone Forced Oxidation FGD System including: Absorber Area, Reagent Prep, and Dewatering System Quote from "Babcock Power Environmental".
- Chimney Quote from "Hamon Custodis"
- FGD ZLD System Quote from "Aquatech"
- Reagent and Gypsum Handling System Quote from "Robert & Schaefer"
- Booster Fan Quote from "TLT-Babcock"
- New Railroad Tracks & Modifications cost provided by Owner
- Electrical Equipment prices are from "ABB"

Several quotes were received for the WFGD system and the ID Fans, from which the higher quote was used.

S&L did not apply any revisions to the quantities from the 2011 estimates. All quantities contained in the 2011 estimates were intended to be reasonable and representative of projects of this type. All quantity data was developed internally by S&L. Quantities were developed based on project experience of a plant of comparable size and then adjusted based on actual size and capacity differences and also taking into consideration the specific site layout based on the general arrangement drawing.

## **Labor Wage Rates**

Labor Profile – Union

Labor wage rate selected for the estimate - 2013 Union rates for Omaha, Nebraska. Base craft rates are as published in RS Means Labor Rates for the Construction Industry, 2013 Edition. The craft rates are then incorporated into work crews appropriate for the activities by adding allowances for small tools, construction equipment, insurance, and site overheads to arrive at crew rates detailed in the cost estimate. A 1.11 regional labor productivity multiplier is included based on the Compass International Global Construction Yearbook.

Labor Work Schedule and Incentives - Assumed 5x10 work week. All labor hours are subject to \$10/hr per diem subsistence as labor incentives to attract skilled labor to job site.

## **Project Direct & Construction Indirect Costs**

S&L has applied the same basis for the calculation of indirect costs. The 2011 estimates were constructed in such a manner where most of the direct construction costs were determined directly and several direct construction cost accounts were determined indirectly by taking a percentage of the directly determined costs and were identified as "Variable Accounts". These percentages were based on our experience with similar type and size projects. Sales tax is specific to location. Listed below are the variable accounts.

- Scaffolding @ 2.5% of total material and labor cost
- Cost of overtime – 5-10's Hour Days
- Subsistence (per diem) – 10 \$/Hr
- Consumables @ 0.5% of total material and labor cost
- Freight on Material & Equipment @ 5%
- Sales Tax @ 5.5% on material and labor

Client: NPPD  
 Station: GGS Station Units 1&2  
 Project No.: 12681-012



Preparer: A. Teferici  
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- Mobilization/Demobilization included with wage rates
- Contractors G&A Expense @ 10%
- Contractors Profit @ 5%

## **Project Indirect Costs**

Included are the following:

- Engineering, Procurement & Project Services was based on the previous estimate then marked up to reflect current status
- Construction Management @ 1.5% of construction cost
- Craft start-up and commission support @ 1% of construction cost
- Spare Parts @ 3% of equipment cost
- Owner's Engineering was based on the previous estimate then marked up to reflect current status
- Owner's Bond and Fees @ 2.5% of \$200,000,000
- Owner's Costs @ 2% of construction cost
- EPC Fee @ 15% of construction cost

These percentages are similar to the 2011 estimates and are based on our experience with similar type and size projects..

## **Escalation**

Beyond 2013 pricing and until project completion, escalation is estimated at 2.5% for Equipment, 2.5% for Material, 3.0% for Labor and 2.5% for Indirects.

## **Contingency**

S&L has applied the same contingency percentages from the 2009 estimates at 20% for all cost categories (Equipment, Material, Labor and Indirects).

## **Exclusions**

The following list of exclusions are based on 2011 estimates and are still valid for the current updates:

- Permitting costs
- Rock excavation
- Remediation of soil for hazardous materials
- Land cost for new switchyard addition
- MVAR/Reactors.
- Fencing modification and gateway including switchyard security system retrofit
- Power outage cost during construction

## **Assumptions**

The following list of assumptions are based on 2011 estimates and are still valid for the current updates:

- All electrical work will be done during switchyard power outage.
- Assumed that fencing modification and gateway including switchyard security system retrofit will be required.
- Assumed that water table is below the excavation depth.

### **Technical Basis**

The technical basis for this estimate update (2013) remains unchanged from the discussion below.

The technical basis for the 2011 cost estimate update is similar to the February 15, 2008 estimate, with a few revisions and more defined scope described in the bullets below.

- Absorber tower materials of construction changed from 2205 alloy steel to Stebbins tile lined concrete. This also results in a larger foundation design. All of the absorber tower internals are C-276.
- The material handling systems for limestone and gypsum changed significantly from the design used for the 2008 estimate based on further engineering developments previously agreed with NPPD. This also results in material quantity changes for excavation and foundation work.
- Addition of limestone rail car thaw shed. It is noted that NPPD transmittal #115 dated 3/26/09 requested that the car thaw shed be similar to the Sheldon Station car thaw shed, which is oil fired. S&L is requesting NPPD to advise whether the GGS shed shall be oil fired or electric heated. This estimate assumed electric heated shed as the oil system equipment for an oil fired shed is unknown at this time.
- Addition of make-up water well pumps and associated piping.
- Addition of a zero liquid discharge (ZLD) wastewater treatment system to treat the FDG system chloride blowdown flows. A conservative blowdown flow of 10 gpm used to size the ZLD system equipment.
- Relocation of the hydrogen building and transformer oil interceptor to provide minimum clearance requirements from the new transformers.
- More defined electrical scope to better define equipment and material quantities for switchgear, MCCs, bus, cable, raceway, etc.
- Revisions to various material quantities to match the latest GGS site general arrangement, including building steel, foundations, etc.
- Use of auger cast piles in lieu of caissons for foundation design. S&L reviewed the GGS soil investigation report, and concluded that auger cast piles are more appropriate.
- New vendor quotes were received for the following equipment, reflecting current pricing:
  - WFGD
  - Chimney
  - Material Handling
  - ID fans and motors
  - ZLD system
  - Major transformers

Nebraska Public Power District  
Gerald Gentleman Station, Unit 1&2

Project No, 12681-012  
10/09/2013

The following is a summary of the technical basis of the Phase 1 wet limestone forced oxidation FGD system capital cost estimate and the Unit 1 and 2 ID Fan and Aux Power system capital cost estimate from 2008.

1. Limestone Handling common to both Units

- a. Limestone rail car thaw shed
  - i. Based on electric heating system (originally estimated on 3/24/09, but has been updated with current pricing)
- b. Limestone rail car unloader
  - i. Bottom dump cars.
  - ii. Capable of unloading a 126 car unit train at 2000 TPH, once per month. The station will be able to unload in 8 hrs if the train is not split, 12-14 hrs if the train is split.
  - iii. Two steel (2) track hoppers including one (1) belt feeder, 72 in. wide, 50 ft. long.
  - iv. Track hopper (unloading) building, including car shaker and support steel.
  - v. Fogging type dust suppression system.
  - vi. Heating and ventilation system.
  - vii. Sump and sump pumps (2)
  - viii. Two (2) 1000 TPH each frozen limestone crackers
  - ix. Electrical equipment room for unloading building.
  - x. Vendor quote from Roberts and Schaefer Co (for items i through vii, minus the sump).
- c. Limestone stack out
  - i. One (1) conveyor, 48 in. wide, 550 ft. long, 2000 TPH, with 200 ft in tunnel and 350 ft. in enclosed and heated gallery.
  - ii. Drop spout to grade (telescopic chute), no dust control.
  - iii. 37 day active pile and 328 day inactive pile.
  - iv. Bulldozer for moving limestone, about 4 hours/day.
  - v. Vendor quote from Roberts and Schaefer Co (for items i through ii).
- d. Limestone reclaim
  - i. Two (2) conveyors, each 30 in. wide, 650 ft. long, 500 TPH, with 175 ft. in tunnel and 475 ft. in enclosed and heated gallery.
  - ii. Two steel (2) reclaim hoppers including two (2) variable rate belt feeders.
  - iii. Two (2) lime silo feed reversible conveyors, each 30 in. wide, 40 ft. long, 400 TPH.
  - iv. Fogging type dust suppression system.
  - v. Heating and ventilation system.
  - vi. Sump and sump pumps (2)
  - vii. Two (2) 400 TPH each frozen limestone crackers
  - viii. Vendor quote from Roberts and Schaefer Co (for items i through vi, minus the sump).

Nebraska Public Power District  
Gerald Gentleman Station, Unit 1&2

Project No, 12681-012  
10/09/2013

- e. General
    - i. All service air and service water piping within vendor's scope
    - ii. All fire protection (conveyor and belt feeder drive ends only) within vendor's scope
    - iii. All gallery work, hoists and trolleys within vendor's scope.
    - iv. All motors, control panels and lighting fixtures within vendor's scope.
2. Limestone Preparation common to both Units
- a. Limestone day silo
    - i. 2 steel day silos with bin vent for dust control, 20 ft diameter, 60 ft tall.
    - ii. Bin activator per silo.
    - iii. Silo level monitoring system.
    - iv. Vendor quotes from Babcock Power, B&W and Advatech (for items i. through iii).
  - b. Ball mills
    - i. Two (2) at 100% capacity, 1 operating 1 spare, each with a classifiers to size the limestone, and a limestone slurry tank.
    - ii. Four (4) ball mill slurry pumps, 1 operating 1 spare per train.
    - iii. Two ball mill limestone weigh feeders.
    - iv. Two (2) limestone slurry feed pumps to recirculate slurry to each absorber and back to the slurry tank.
    - v. Vendor quotes from Babcock Power, B&W and Advatech (for items i. through iv).
  - c. Slurry Loop: Two (2), 1 operating and 1 spare 950 lineal feet of pipe to Unit 1 absorber, Two (2), 1 operating and 1 spare, 1500 lineal feet of pipe to Unit 2 absorber.
  - d. Limestone Prep Building, including lighting, HVAC and fire protection.
3. Absorber Area per Unit
- a. One (1) 68.5 ft. diameter absorber vessel per unit.
  - b. Vessel is concrete lined with Stebbins tile.
  - c. Inlet wet/dry interface to FGD absorber is C-276.
  - d. L/G of 59.8 Unit 1 and 55.5 Unit 2 (gpm/kacfm).
  - e. Three (3) spray levels, 2 operating and 1 spare.
  - f. Two (2) trays per absorber, C-276.
  - g. Five (5) slurry recycle pumps, 4 operating and 1 spare.
  - h. Two (2) absorber bleed pumps, 1 operating and 1 spare.
  - i. Side entry agitators.
  - j. Two (2) levels of mist eliminators, Polypropylene.
  - k. Two (2) mist eliminator water pumps, 1 operating and 1 spare.
  - l. Two (2) oxidation air compressors, 1 operating and 1 spare.
  - m. One (1) emergency quench pump
  - n. Absorber building.
  - o. Elevator in absorber area.



Nebraska Public Power District  
Gerald Gentleman Station, Unit 1&2

Project No, 12681-012  
10/09/2013

- p. Hoists and trolleys.
  - q. Roofing.
  - r. Lighting, heating and ventilation.
  - s. Vendor quotes from Babcock Power, B&W and Advatech (for items a through l).
4. Emergency Diesel Generator
5. Dewatering Area common to both Units
- a. Two (2) primary hydroclones.
  - b. Two (2) vacuum belt filters, 1 operating and 1 spare.
  - c. One (1) make-up water tank with two (2) make-up water pumps, 1 operating and 1 spare.
  - d. One (1) reclaim water tank with two (2) reclaim pumps, 1 operating and 1 spare.
  - e. One (1) filter feed tank with two (2) filter feed pumps, 1 operating and 1 spare.
  - f. Dewatering Building, including lighting and HVAC.
  - g. Vendor quotes from Babcock Power, B&W and Advatech (for items a through e).
6. Gypsum Handling common to both Units
- a. Two (2) gypsum collecting conveyors, each 24 in. wide, 75 ft. long, 75 TPH.
  - b. Motorized diverter gates.
  - c. Two (2) gypsum stack out conveyors, each 24 in. wide, 200 ft. long, 75 TPH, within an enclosed and heated gallery.
  - d. Heating and ventilation system.
  - e. Two (2) drop spouts to grade (telescopic chute), no dust control.
  - f. 60 hr. normal stack out pile and 60 hr. emergency stack out pile.
  - g. General
    - i. All service air and service water piping within vendor's scope
    - ii. All fire protection (conveyor drive ends only) within vendor's scope
    - iii. All gallery work, hoists and trolleys within vendor's scope.
    - iv. All motors, control panels and lighting fixtures within vendor's scope.
  - h. Vendor quote from Roberts and Schaefer Co (for items a through e, and g).
7. Flues Including Support Steel per Unit
- a. Fan outlet to absorber inlet
    - i. Carbon steel.
    - ii. Velocity = 4000 to 4500 fpm.
    - iii. 4" insulation with lagging.
  - b. Absorber to chimney
    - i. FRP.
    - ii. Velocity 4000 fpm.
  - c. Flue gas path reinforcement
    - i. No reinforcement.

Nebraska Public Power District  
Gerald Gentleman Station, Unit 1&2

Project No, 12681-012  
10/09/2013

8. New Chimney per Unit

- a. New concrete shell with FRP liner and two breechings.
- b. 550' height, 30 ft diameter FRP liner.
- c. Basic liquid collection system and drains in bottom.
- d. Abandon existing chimney in place and it could be an optional bypass around the FGD.
- e. No capping of the old chimney included. The price is \$1,900,000 per chimney.
- f. Vendor Quote from Hamon Custodis (for items a through c).

9. Control System Modifications per Unit

- a. Based on number of I/O points. Each Unit has 1,218 I/O points.

10. Rail Yard Extension common to both Units

- a. Track modification work to accommodate limestone trains. Quotation provided by NPPD and included in estimate.
- b. Work for limestone track bridge. NPPD estimate from December of 2009 included in estimate and escalated to current day pricing.

11. Subsurface and Foundation Work-All

- a. Foundation system consists of 18" x 70' auger cast piles.

12. Civil Work-All

- a. Initial site grading / earthwork.
- b. Site drainage systems, including limestone storm water run-off pond.
- c. Roads.
- d. White rock surfacing.

13. Demolition and Relocation

- a. Demolition of warehouse east of Unit 2 baghouse and addition of new warehouse next to GGS main plant warehouse.
- b. Demolition of old chimney not included. The approximate cost is \$4,500,000 per chimney.
- c. Relocation of Hydrogen Building
- d. Relocation of Transformer Oil Interceptor.

14. Pipe Racks common to both Units

- a. Between reagent prep and absorber and dewatering areas

15. CEMS per Unit

- a. New CEMS.

16. Water Treatment (ZLD system) common to both Units

- a. Based on 10 gpm total waste water blowdown from Unit 1 and 2 FGD systems.

Nebraska Public Power District  
Gerald Gentleman Station, Unit 1&2

Project No, 12681-012  
10/09/2013

- b. Pre-treatment system including One (1) clarifier, lime dosing system, soda ash dosing system, coagulant/flocculant dosing system and a sludge dewatering system.
  - c. Forced circulating crystallizer system including flash tank, foam separator, vapor compressor, pumps and heat exchangers
  - d. One (1) Belt Filter Press
  - e. Preassembled and skid-mounted.
  - f. Vendor quote from Aquatech (for items b through e).
  - g. Water treatment building, including lighting, HVAC and fire protection.
- 17. Instrument/Service Air Compressor, Dryer and Receiver common to both Units
- 18. Field Painting-All
  - a. Multiple coat system used for exposed ductwork only.
  - b. Inorganic zinc primer and polyurethane system used for steel.
- 19. Performance Testing- All
  - a. Not included. Part of Owner's costs.
- 20. Piping common to both Units
  - a. Water supply to oxidation air pipe, reagent preparation and dewatering area boundary from service water (50degF to 90 degF range).
  - b. Instrument air piping to every silo or day bin, bin vent and reagent preparation/dewatering area.
  - c. Heat traced piping.
- 21. Installation- All
- 22. New booster ID fans-All
  - a. Two axial ID booster fans per Unit, designed to accommodate operation with FGD only or FGD and SCR..
  - b. Vendor quotes from FlaktWoods and TLT Babcock.
- 23. Electrical-All
  - a. Two (2) start up transformers (RATs).
  - b. Two (2) unit auxiliary transformers (UATs).
  - c. 480 V unit substation transformers.
  - d. 480 V switchgear and MCC for the unloading building electrical room
  - e. One (1) reagent prep electrical equipment building with medium voltage and low voltage switchgear and MCCs.
  - f. Two (2) main electrical equipment buildings with medium voltage and low voltage switchgear and MCCs.
  - g. Switchyard modification with additional breakers, a redundant 230 kV transmission line and rigid bus
  - h. Iso-phase bus, cable bus, cable and raceway.
  - i. Vendor quote from ABB (for items a and b).

Nebraska Public Power District  
Gerald Gentleman Station, Unit 1&2

Project No, 12681-012  
10/09/2013

24. Make-up water wells and piping

- a. Utilize existing wells OW-27 and OW-28, adding two (2) new 2600 gpm pumps and pump houses. These wells are developed but currently have no pumps. The discharge piping from these wells will "T", and be routed to the common marshalling area. Approximately 4000' of 12" pipe (mostly buried) will be required.

Nebraska Public Power District  
Gerald Gentleman Station Units 1 & 2

**Estimate Summary  
for Wet FGD**

12681-012  
10/09/2013

	Equipment Cost (\$ Millions)	Material Cost (\$ Millions)	Labor Cost (\$ Millions)	Erection Labor Man-Hours	Total Cost (\$ Millions)	Normalized Cost (\$/kW)
Unit 1 Absorber Area (Estimate No. 31249B)						
Total Direct & Construction Indirect	62.426	25.691	54.559	442,688	142.676	
Project Indirect	0.000	0.000	0.000	0	30.619	
EPC portion	0.000	0.000	0.000	0	22.217	
Escalation	0.000	0.000	0.000	0	23.002	
Contingency @ 20%					39.260	
AFUDC	0.000	0.000	0.000	0	39.443	
Unit 2 Absorber Area (Estimate No. 31252B)						
Total Direct & Construction Indirect	62.426	25.691	54.559	442,688	142.676	
Project Indirect	0.000	0.000	0.000	0	30.619	
EPC portion	0.000	0.000	0.000	0	22.217	
Escalation	0.000	0.000	0.000	0	28.227	
Contingency @ 20%					40.304	
AFUDC	0.000	0.000	0.000	0	49.415	
Unit 1 & 2 Common Area (Estimate No. 31250B)						
Total Direct & Construction Indirect	79.032	33.028	93.126	786,829	205.187	
Project Indirect	0.000	0.000	0.000	0	80.836	
EPC portion	0.000	0.000	0.000	0	35.589	
Escalation	0.000	0.000	0.000	0	38.411	
Contingency @ 20%					64.557	
AFUDC	0.000	0.000	0.000	0	76.683	
Unit 1 & 2 Auxil. Power & ID Fans (Estimate No. 31251B)						
Total Direct & Construction Indirect	33.350	8.890	29.655	285,947	71.896	
Project Indirect	0.000	0.000	0.000	0	15.496	
EPC portion	0.000	0.000	0.000	0	11.204	
Escalation	0.000	0.000	0.000	0	11.653	
Contingency @ 20%					19.809	
AFUDC	0.000	0.000	0.000	0	23.504	
Project Totals						
Total Direct & Construction Indirect	237.234	93.301	231.899	1,958,152	562.434	
Project Indirect	0.000	0.000	0.000	0	157.571	
EPC portion	0.000	0.000	0.000	0	91.227	
Escalation	0.000	0.000	0.000	0	101.293	
Contingency @ 20%					163.930	
AFUDC	0.000	0.000	0.000	0	189.045	
"All In" Grand Total with EPC Fee =					1174.273	810
Grand Total without EPC Fee =					1083.045	747
Price Level =					Q3, 2013	

ESTIMATE NO. : 31249B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

NPPD  
 GERALD GENTLEMAN STATION UNIT 1 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

SARGENT & LUNDY

CODE OF ACCOUNT	DESCRIPTION A	EQUIPMENT COST	MATERIAL COST	LABOR COST	TOTAL COST
11 Total	DEMOLITION		153,600	120,901	274,501
21 Total	CIVIL WORK	1,366,864	564,465	563,850	2,495,179
22 Total	CONCRETE		1,446,700	3,697,148	5,143,848
23 Total	STEEL		11,917,424	11,179,615	23,097,039
24 Total	ARCHITECTURAL	367,710	651,327	464,474	1,483,510
25 Total	CONCRETE CHIMNEY & STACK	13,492,856			13,492,856
27 Total	PAINTING & COATING		28,000	45,880	73,880
31 Total	MECHANICAL EQUIPMENT	44,225,767	552,500	16,626,430	61,404,697
34 Total	HVAC		560,000	372,926	932,926
35 Total	PIPING		600,344	1,068,332	1,668,676
36 Total	INSULATION		503,855	2,061,368	2,565,224
41 Total	ELECTRICAL EQUIPMENT		280,000	308,939	588,939
44 Total	CONTROL & INSTRUMENTATION				
90	SUBTOTAL DIRECT & CONSTRUCTION INDIRECT COST	59,453,197	17,258,215	36,509,864	113,221,275
91	OTHER DIRECT & CONSTRUCTION INDIRECT COST				
91-1	SCAFFOLDING - % of ACCT NO. 90			1,344,202	1,344,202
91-2	COST DUE TO OVERTIME WORKING 5 -10 HOUR DAYS			5,246,871	5,246,871
91-3	PER DIEM			4,072,733	4,072,733
91-4	CONSUMABLES - % of ACCT NO. 90			268,840	268,840
91-5	FREIGHT ON MATERIAL - % of ACCT NO. 90		862,911		862,911
91-6	FREIGHT ON EQUIPMENT - % of ACCT NO. 90	2,972,660			2,972,660
91-7	SALES TAX - % of ACCT NO. 90 MATERIAL & EQUIPMENT SHOWN ON MATERIAL COLUMN		4,219,128		4,219,128
91-8	MOBILIZATION/DEMOBILIZATION - NOT INCLUDED				
91-9	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE - % of ACCT NO. 90, 91-1 TO 91-8		2,234,025	4,744,251	6,978,276
91-10	CONTRACTOR'S PROFIT - % of ACCT NO. 90, 91-1 TO 91-8		1,117,013	2,372,125	3,489,138
	91 - SUBTOTAL	2,972,660	8,433,076	18,049,023	29,454,759
92	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	62,425,857	25,691,291	54,558,886	142,676,034
93	INDIRECT COST				
93-1	ENGINEERING, PROCUREMENT, & PROJECT SERVICES - NOT INCLUDED				
93-2	CONSTRUCTION MANAGEMENT SUPPORT - % of ACCT NO. 92				2,140,141
93-3	S-U / COMMISSIONING - % of ACCT NO. 92				1,426,760
93-4	SPARE PARTS - % of ACCT NO. 92 EQUIPMENT				1,872,776
93-5	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4				2,962,314
93-6	EPC FEE - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4				22,217,357
	93 - TOTAL				30,619,347
94	TOTAL ESCALATION				23,002,247
94-1	ESCALATION ON EQUIPMENT - % of ACCT NO. 92	7,010,117			7,010,117
94-2	ESCALATION ON MATERIAL - % of ACCT NO. 92		3,239,529		3,239,529
94-3	ESCALATION ON LABOR - % of ACCT NO. 92			8,890,615	8,890,615
94-4	ESCALATION ON INDIRECT - % of ACCT NO. 93				3,861,985
95	TOTAL CONTINGENCY				39,259,526
95-1	CONTINGENCY ON EQUIPMENT - % of ACCT NO. 92, 94.1	13,887,195			13,887,195
95-2	CONTINGENCY ON MATERIAL - % of ACCT NO. 92, 94.2		5,786,164		5,786,164
95-3	CONTINGENCY ON LABOR - % of ACCT NO. 92, 94.3			12,689,900	12,689,900
95-4	CONTINGENCY ON INDIRECT - % of ACCT NO. 93, 94.4				6,896,267

ESTIMATE NO. : 31249B  
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SARGENT & LUNDY

NPPD  
GERALD GENTLEMAN STATION UNIT 1 ABSORBER AREA  
WET FGD  
CONCEPTUAL COST ESTIMATE

CODE OF ACCOUNT	DESCRIPTION A	EQUIPMENT COST	MATERIAL COST	LABOR COST	TOTAL COST
96	TOTAL CONSTRUCTION COST				235,557,154
97	INTEREST DURING CONSTRUCTION ( COMPOUNDED MONTHLY)				39,443,332
98	TOTAL PROJECT COST				275,000,486

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## Question 1

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 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
11	<b>DEMOLITION</b>		1.1	1.051						
11-23	DUCTWORK	DEMOLITION/MODIFICATION TO EXISTING BH DUCTS	60	TN		153,600	1,056	114.49	120,901	274,501
	11-23 Total					153,600	1,056		120,901	274,501
	11 Total					153,600	1,056		120,901	274,501
21	<b>CIVIL WORK</b>									
21-13	CLEARING & GRUBBING									
21-13-1	CLEARING & GRUBBING	STRIP 12" TOPSOIL & STOCKPILE	7	AC			246	174.50	42,997	42,997
21-13-2	CLEARING & GRUBBING	CUT, STOCKPILE & FILL	9,500	CY			1,202	174.50	209,705	209,705
	21-13 Total						1,448		252,702	252,702
21-51	MISCELLANEOUS									
21-51-1	PIPE TRENCH	6" PIPE, 4' BURIAL AND BEDDING	130	LF		724	44	72.75	3,225	3,949
21-51-2	PIPE TRENCH	2" PIPE, 4' BURIAL AND BEDDING	130	LF		446	37	72.75	2,705	3,151
	21-51 Total					1,170	82		5,930	7,100
21-53	PILING & CAISSON									
21-53-1	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR COST INCLUDES LABOR	ABSORBER TOWER FOUNDATION	140	EA	374,850			110.01		374,850
21-53-2	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR COST INCLUDES LABOR	PUMP BLOWER BUILDING ABSORBER AREA	101	EA	269,089			110.01		269,089
21-53-3	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR COST INCLUDES LABOR	DUCT SUPPORTS FOUNDATION	90	EA	240,975			110.01		240,975
21-53-4	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR COST INCLUDES LABOR	CHIMNEY SUBSTRUCTURE	120	EA	321,300			110.01		321,300
21-53-5	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR COST INCLUDES LABOR	PIPE RACK	60	EA	160,650			110.01		160,650
21-53-6	MOB/DEMOB & TEST PILE	INCLUDED IN UNIT 1&2 COMMON FACILITIES ESTIMATE		EA				110.01		
	21-53 Total				1,366,864					1,366,864
21-57	ROAD, PARKING AREA, & SURFACED AREA									
21-57-1	CRUSHED ROCK SURFACING, 12"		33,350	SY	356,845		734	99.12	72,724	429,569
21-57-2	ROADWAY 24' WIDE 4" ASPHALT		1,250	FT	151,250		1,636	82.19	134,483	285,733
	21-57 Total				508,095		2,370		207,208	715,303
21-99	STORM SEWER		1	LT	55,200		1,100	89.10	98,010	153,210
	21-99 Total				55,200		1,100		98,010	153,210
	21 Total				1,366,864	564,455	5,000		563,850	2,495,179

Print Date 10/9/2013 9:03 AM

Page 3 of 9

NPPDRH114\_0006398

ED\_005798\_00000590-00016



## Question 1

ESTIMATE NO. : 31249B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
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 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
22	<b>CONCRETE</b>									
22-13	CONCRETE									
22-13-1	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	ABSORBER TOWER FOUNDATION	1,100	CY		253,000	8,470	69.20	586,124	839,124
22-13-2	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	PUMP BLOWER BUILDING, ABSORBER AREA	1,670	CY		384,100	12,859	69.20	889,843	1,273,943
22-13-3	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	DUCT SUPPORTS FOUNDATION	400	CY		92,000	5,280	69.20	365,376	457,376
22-13-4	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	CHIMNEY FDN	2,800	CY		598,000	20,020	69.20	1,385,384	1,983,384
22-13-5	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	PIPE RACK	500	CY		115,000	6,600	69.20	456,720	571,720
22-13-6	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	ELEVATOR FOUNDATION	20	CY		4,600	198	69.20	13,702	18,302
22-13 Total						1,446,700	53,427		3,697,148	5,143,848
22 Total						1,446,700	53,427		3,697,148	5,143,848
23	<b>STEEL</b>									
23-15	DUCTWORK									
23-15-1	DUCTWORK PANEL SECTIONS, INCL DUCT PLATE, STIFFENERS, INTERNAL TRUSSES, TURNING VANES	ID FAN OUTLET TO BOOSTER FAN INLET	600	TN		1,950,000	39,600	111.01	4,385,996	6,345,996
23-15-2	DUCTWORK PANEL SECTIONS, INCL DUCT PLATE, STIFFENERS, INTERNAL TRUSSES, TURNING VANES	BOOSTER FAN TO SCRUBBER	300	TN		975,000	19,800	111.01	2,167,968	3,172,998
23-15-3	DUCTWORK, FRP 32" DIAMETER X 200'	SCRUBBER TO CHIMNEY	20.096	SF		3,476,608	3,095	111.01	343,552	3,820,160
23-15 Total						6,401,608	62,495		6,937,546	13,339,154
23-17	GALLERY									
23-17-1	GRATING	PUMP BLOWER BUILDING	3,333	SF		49,995	733	86.03	63,082	113,077
23-17-2	STAIRS	PUMP BLOWER BUILDING	2,000	SF		181,056	2,530	86.03	217,656	398,712
23-17-3	HANDRAIL AND GUARDPLATE	PUMP BLOWER BUILDING	2,500	LF		132,500	1,513	86.03	130,120	262,620
23-17-4	LADDERS	PUMP BLOWER BUILDING	867	LF		60,030	587	86.03	50,496	110,526
23-17-5	SWING GATES	PUMP BLOWER BUILDING	33	EA		11,715	145	86.03	12,492	24,207
23-17 Total						435,296	5,508		473,846	909,142
23-25	ROLLED SHAPE									
23-25-1	ROLLED SHAPE	PUMP BLOWER BUILDING	500	TN		1,280,000	8,800	107.82	948,816	2,228,816
23-25-2	ROLLED SHAPE	PUMP BLOWER BUILDING GALLERY SUPPORT STEEL	167	TN		427,520	2,939	107.82	316,905	744,425
23-25-3	ROLLED SHAPE	MISCELLANEOUS STRUCTURAL STEEL, ABSORBER AREA	100	TN		256,000	1,760	107.82	189,763	445,763
23-25-4	ROLLED SHAPE	ID FAN OUTLET TO BOOSTER FAN INLET DUCT SUPPORTS	600	TN		1,536,000	10,560	107.82	1,138,579	2,674,579
23-25-5	ROLLED SHAPE	BOOSTER FAN TO SCRUBBER DUCT SUPPORTS	100	TN		256,000	1,760	107.82	189,763	445,763

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NPPD  
 GERALD GENTLEMAN STATION UNIT 1 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
23-25-6	ROLLED SHAPE	SCRUBBER TO CHIMNEY DUCT SUPPORTS	200	TN		512,000	3,520	107.82	379,526	891,526
23-25-7	ROLLED SHAPE	PIPE RACK STRUCTURAL STEEL	300	TN		813,000	5,610	107.82	604,870	1,417,870
23-25 Total						5,080,520	34,949		3,768,223	8,848,743
23 Total						11,917,424	102,952		11,179,815	23,097,039
24	<b>ARCHITECTURAL</b>									
24-15	DOOR (INCL. FRAME & HARDWARE)									
24-15-1	MANDOORS	PUMP BLOWER BUILDING	3	EA		4,712	26	59.60	1,573	6,285
24-15-2	ROLLUP DOOR	PUMP BLOWER BUILDING	1	EA		17,335	44	59.60	2,622	19,957
24-15 Total						22,047	70		4,196	26,243
24-17	ELEVATOR									
24-17-1	ELEVATOR	RACK & PINION	1	EA	367,710		1,375	103.44	142,230	509,940
24-17 Total					367,710		1,375		142,230	509,940
24-37	ROOFING									
24-37-1	INSULATED METAL ROOFING	PUMP BLOWER BUILDING	14,000	SF		231,840	1,371	67.65	92,721	324,561
24-37 Total						231,840	1,371		92,721	324,561
24-41	SIDING									
24-41-1	INSULATED METAL SIDING	PUMP BLOWER BUILDING	24,000	SF		397,440	2,350	95.90	225,327	622,767
24-41 Total						397,440	2,350		225,327	622,767
24 Total					367,710	651,327	5,166		464,474	1,483,510
25	<b>CONCRETE CHIMNEY &amp; STACK</b>									
25-13	CONCRETE CHIMNEY	CHIMNEY STRUCTURE, CONCRETE W/ SINGLE FRP LINER, 550' HIGH - HAMON CUSTODIS BUDGETARY QUOTE	1	EA	13,492,856					13,492,856
25-13 Total					13,492,856					13,492,856
25 Total					13,492,856					13,492,856
27	<b>PAINTING &amp; COATING</b>									
27-17	PAINTING									
27-17-1	TOUCH-UP PAINTING	PUMP BLOWER BUILDING	28,000	SF		28,000	616	74.48	45,880	73,880
27-17 Total						28,000	616		45,880	73,880
27 Total						28,000	616		45,880	73,880
31	<b>MECHANICAL EQUIPMENT</b>									
31-27	DAMPERS & ACCESSORIES									

Print Date 10/9/2013 9:03 AM

Page 5 of 9

NPPDRH114\_0006400

ED\_005798\_00000590-00018

## Question 1

ESTIMATE NO. : 31249B  
 PROJECT NO. : 12681-012  
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PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
31-27-1	DAMPERS	BOOSTER FANS - BASED ON THE ESTIMATED ADDITIONAL COST PROVIDED BY TLT BABCOCK	2	EA	168,096		858	111.01	95,247	263,343
31-27 Total					168,096		858		95,247	263,343
31-33	EXPANSION JOINT									
31-33-1	EXPANSION JOINT	ID FAN OUTLET TO BOOSTER FAN INLET	1,100	LF		275,000	2,420	111.01	268,644	543,644
31-33-2	EXPANSION JOINT	BOOSTER FAN TO SCRUBBER	230	LF		57,500	506	111.01	56,171	113,671
31-33-3	EXPANSION JOINT	SCRUBBER TO CHIMNEY	320	LF		80,000	704	111.01	78,151	158,151
31-33 Total						412,500	3,630		402,956	815,466
31-41	FIRE PROTECTION EQUIPMENT & SYSTEM									
31-41-1	FIRE PROTECTION EQUIPMENT & SYSTEM	PUMP BLOWER BUILDING	28,000	SF		140,000	2,064	85.91	177,284	317,284
31-41 Total						140,000	2,064		177,284	317,284
31-45	FLUE GAS CLEANUP, FGD EQUIPMENT							85.91		
31-45-1	ABSORBER AREA SYSTEM	BASED ON BABCOCK POWER BUGETARY EQUIPMENT PRICE INCLUDES ABSORBER VESSEL ERECTION. LABOR COST IS FOR MECHANICAL EQUIPMENT ERECTION	1	LS	43,759,591		184,800	85.91	15,876,168	59,635,759
31-45 Total					43,759,591		184,800		15,876,168	59,635,759
31-75	PUMP									
31-75-1	PUMP	QUENCH PUMPS	1	LT	165,600		880	84.96	74,765	240,365
31-75 Total					165,600		880		74,765	240,365
31-99	MODEL STUDIES		1	EA	132,480			85.91		132,480
31-99 Total					132,480					132,480
31 Total					44,225,767	552,500	192,232		16,626,430	61,404,697
34	HVAC									
34-99	HVAC	PUMP BLOWER BUILDING	28,000	SF		560,000	4,620	80.72	372,926	932,926
34-99 Total						560,000	4,620		372,926	932,926
34 Total						560,000	4,620		372,926	932,926
35	PIPING									
35-13	LARGE BORE PIPING									
35-13-1	6" CS SCH 40 HT, INSULATED PIPING	ABOVE GROUND PIPING	1,380	LF		44,298	2,444	93.61	228,781	273,079
35-13-2	6" CS SCH 40 PIPING	ABOVE GROUND PIPING	130	LF		4,173	230	93.61	21,552	25,725
35-13-3	6" FRP PIPING	ABOVE GROUND PIPING	1,630	LF		66,830	1,255	93.61	117,490	184,320

Print Date 10/9/2013 9:03 AM

Page 6 of 9

NPPDRH114\_0006401

ED\_005798\_00000590-00019

## Question 1

ESTIMATE NO. : 31249B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
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 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
35-13-4	6" HDPE, SDR 9 PIPING	BURIED PIPING	130	LF		1,170	99	89.10	8,791	9,961
35-13-5	4" FRP PIPING	ABOVE GROUND PIPING	2,510	LF		76,555	1,132	93.61	105,967	182,522
35-13-6	3" CS SCH 40 PIPING	ABOVE GROUND PIPING	1,260	LF		22,050	1,857	93.61	173,856	195,906
35-13-7	2.5" FRP PIPING	ABOVE GROUND PIPING	60	LF		1,548	22	93.61	2,039	3,587
35-13-8	VALVES	6" SS GATE VALVE, FLANGED, 150LB	3	EA		11,189	53	93.61	4,943	16,131
35-13-9	VALVES	6" CI POST INDICATOR 250LB, MECHANICAL JOINT WITH BOXES	3	EA		2,222	13	93.61	1,236	3,458
35-13-10	VALVES	4" SS GATE VALVE, FLANGED, 150LB	4	EA		8,615	53	93.61	4,984	13,599
35-13-11	VALVES	3" VALVES FOR SERVICE WATER ISOLATION	40	EA		42,024	343	93.61	32,127	74,151
35-13-12	VALVES	3" VALVES FOR SERVICE AIR ISOLATION	40	EA		42,024	343	93.61	32,127	74,151
35-13 Total						322,698	7,845		733,893	1,056,591
35-15	SMALL BORE PIPING							93.61		
35-15-1	2" CS SCH 80 PIPING	ABOVE GROUND PIPING	325	LF		6,523	408	93.61	38,151	45,073
35-15-2	2" CS/RL SCH 40 PIPING	ABOVE GROUND PIPING	130	LF		3,900	44	93.61	4,150	8,050
35-15-3	2" SS 304 SCH 40 PIPING	ABOVE GROUND PIPING	1,130	LF		29,041	1,790	93.61	167,554	196,595
35-15-4	2" CS SCH 80 PIPING	BURIED PIPING	130	LF		2,223	103	93.61	9,638	11,861
35-15-5	1" SS 304 SCH 40S PIPING	ABOVE GROUND PIPING	130	LF		2,808	162	93.61	15,126	17,934
35-15-6	VALVES	2" SS VALVES FOR INSTRUMENT AIR ISOLATION	200	EA		177,551	160	93.61	14,972	192,523
35-15 Total						222,446	2,666		249,591	472,037
35-99	BOP PIPING & VALVES	FOR QUENCH PUMPS	1	LT		55,200	906	93.61	84,848	140,048
35-99 Total						55,200	906		84,848	140,048
35 Total						600,344	11,417		1,068,332	1,668,676
36	INSULATION									
36-13	INSULATION, DUCT & EQUIPMENT									
36-13-1	MINERAL WOOL INSULATION 4" THK, 8 LB/CF DENSITY, ALUMINUM LAGGING - INSTALLED IN PLACE	ID FAN OUTLET TO BOOSTER FAN INLET	52,000	SF		312,000	17,160	79.31	1,360,980	1,672,980
36-13-2	MINERAL WOOL INSULATION 4" THK, 8 LB/CF DENSITY, ALUMINUM LAGGING - INSTALLED IN PLACE	BOOSTER FAN TO SCRUBBER	25,000	SF		150,000	8,250	79.31	654,308	804,308
36-13 Total						462,000	25,410		2,015,267	2,477,267
36-15	INSULATION, PIPE									
36-15-1	INSULATION, PIPE	3" CAL SIL INSULATION FOR 6" PIPE	1,380	LF		41,855	758	60.80	46,101	87,956
36-15 Total						41,855	758		46,101	87,956
36 Total						503,855	26,168		2,061,368	2,565,224

Print Date 10/9/2013 9:03 AM

Page 7 of 9

NPPDRH114\_0006402

ED\_005798\_00000590-00020

## Question 1

ESTIMATE NO. : 31249B  
 PROJECT NO. : 12681-012  
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SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
41	<b>ELECTRICAL EQUIPMENT</b>									
41-37	LIGHTING ACCESSORY (FIXTURE)									
41-37-1	LIGHTING ACCESSORY (FIXTURE)	PUMP BLOWER BUILDING	28,000	SF		280,000	4,620	66.87	308,939	588,939
	41-37 Total					280,000	4,620		308,939	588,939
41-41	ELECTRICAL MISCELLANEOUS	INCLUDED IN AUX POWER & FAN ESTIMATE	1	EA				72.95		
	41-41 Total									
	41 Total					280,000	4,620		308,939	588,939
44	<b>CONTROL &amp; INSTRUMENTATION</b>									
44-23	INSTRUMENTATION MISCELLANEOUS	INCLUDED IN UNIT 1&2 COMMON FACILITIES ESTIMATE	1	EA				79.39		
	44-23 Total									
	44 Total									
90	SUBTOTAL DIRECT & CONSTRUCTION INDIRECT COST				59,453,197	17,258,215	407,273		36,509,864	113,221,275
91	OTHER DIRECT & CONSTRUCTION INDIRECT COST									
91-1	SCAFFOLDING - % of ACCT NO. 90		2.5	%					1,344,202	1,344,202
91-2	COST DUE TO OVERTIME WORKING 5 -10 HOUR DAYS		1.0	EA			35,415		5,246,871	5,246,871
91-3	PER DIEM		10.0	\$/HR					4,072,733	4,072,733
91-4	CONSUMABLES - % of ACCT NO. 90		0.5	%					268,840	268,840
91-5	FREIGHT ON MATERIAL - % of ACCT NO. 90		5.0	%		862,911			862,911	862,911
91-6	FREIGHT ON EQUIPMENT - % of ACCT NO. 90		5.0	%	2,972,660				2,972,660	2,972,660
91-7	SALES TAX - % of ACCT NO. 90 MATERIAL & EQUIPMENT SHOWN ON MATERIAL COLUMN		5.5	%		4,219,128			4,219,128	4,219,128
91-8	MOBILIZATION/DEMOBILIZATION - NOT INCLUDED	INCLUDED WITH WAGE RATES		%						
91-9	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE - % of ACCT NO. 90, 91-1 TO 91-8		10.0	%		2,234,025			4,744,251	6,978,276
91-10	CONTRACTOR'S PROFIT - % of ACCT NO. 90, 91-1 TO 91-8		5.0	%		1,117,013			2,372,125	3,489,138
	91 - SUBTOTAL				2,972,660	8,433,076			18,049,023	29,454,759
92	TOTAL DIRECT & CONSTRUCTION INDIRECT COST				62,425,857	25,691,291	442,688		54,558,888	142,676,034
93	INDIRECT COST									
93-1	ENGINEERING, PROCUREMENT, & PROJECT SERVICES - NOT INCLUDED	INCLUDED IN UNIT 1&2 COMMON FACILITIES		%						

Print Date 10/9/2013 9:03 AM

Page 8 of 9

NPPDRH114\_0006403

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## Question 1

ESTIMATE NO. : 31249B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
93-2	CONSTRUCTION MANAGEMENT SUPPORT - % of ACCT NO. 92		1.5	%						2,140,141
93-3	S-U / COMMISSIONING - % of ACCT NO. 92		1.0	%						1,426,760
93-4	SPARE PARTS - % of ACCT NO. 92 EQUIPMENT		3.0	%						1,872,776
93-5	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4		2.0	%						2,962,314
93-6	EPC FEE - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4		15.0	%						22,217,357
93 - TOTAL										30,619,347
94	TOTAL ESCALATION									23,002,247
94-1	ESCALATION ON EQUIPMENT - % of ACCT NO. 92		11.2	%	7,010,117					7,010,117
94-2	ESCALATION ON MATERIAL - % of ACCT NO. 92		12.6	%		3,239,529				3,239,529
94-3	ESCALATION ON LABOR - % of ACCT NO. 92		16.3	%					8,890,615	8,890,615
94-4	ESCALATION ON INDIRECT - % of ACCT NO. 93		12.6	%						3,861,985
95	TOTAL CONTINGENCY									39,259,526
95-1	CONTINGENCY ON EQUIPMENT - % of ACCT NO. 92, 94.1		20.0	%	13,887,195					13,887,195
95-2	CONTINGENCY ON MATERIAL - % of ACCT NO. 92, 94.2		20.0	%		5,786,164				5,786,164
95-3	CONTINGENCY ON LABOR - % of ACCT NO. 92, 94.3		20.0	%					12,689,900	12,689,900
95-4	CONTINGENCY ON INDIRECT - % of ACCT NO. 93, 94.4		20.0	%						6,896,267
96	TOTAL CONSTRUCTION COST									235,557,154
97	INTEREST DURING CONSTRUCTION ( COMPOUNDED MONTHLY)									39,443,332
98	TOTAL PROJECT COST									275,000,486

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ESTIMATE NO. : 31252B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

NPPD  
 GERALD GENTLEMAN STATION UNIT 2 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

SARGENT & LUNDY

CODE OF ACCOUNT	DESCRIPTION A	EQUIPMENT COST	MATERIAL COST	LABOR COST	TOTAL COST
11 Total	DEMOLITION		153,600	120,901	274,501
21 Total	CIVIL WORK	1,366,864	564,465	563,850	2,495,179
22 Total	CONCRETE		1,446,700	3,697,148	5,143,848
23 Total	STEEL		11,917,424	11,179,615	23,097,039
24 Total	ARCHITECTURAL	367,710	651,327	464,474	1,483,510
25 Total	CONCRETE CHIMNEY & STACK	13,492,856			13,492,856
27 Total	PAINTING & COATING		28,000	45,880	73,880
31 Total	MECHANICAL EQUIPMENT	44,225,767	552,500	16,626,430	61,404,697
34 Total	HVAC		560,000	372,926	932,926
35 Total	PIPING		600,344	1,068,332	1,668,676
36 Total	INSULATION		503,855	2,061,368	2,565,224
41 Total	ELECTRICAL EQUIPMENT		280,000	308,939	588,939
44 Total	CONTROL & INSTRUMENTATION				
90	SUBTOTAL DIRECT & CONSTRUCTION INDIRECT COST	59,453,197	17,258,215	36,509,864	113,221,275
91	OTHER DIRECT & CONSTRUCTION INDIRECT COST				
91-1	SCAFFOLDING - % of ACCT NO. 90			1,344,202	1,344,202
91-2	COST DUE TO OVERTIME WORKING 5 -10 HOUR DAYS			5,246,871	5,246,871
91-3	PER DIEM			4,072,733	4,072,733
91-4	CONSUMABLES - % of ACCT NO. 90			268,840	268,840
91-5	FREIGHT ON MATERIAL - % of ACCT NO. 90		862,911		862,911
91-6	FREIGHT ON EQUIPMENT - % of ACCT NO. 90	2,972,660			2,972,660
91-7	SALES TAX - % of ACCT NO. 90 MATERIAL & EQUIPMENT SHOWN ON MATERIAL COLUMN		4,219,128		4,219,128
91-8	MOBILIZATION/DEMOBILIZATION - NOT INCLUDED				
91-9	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE - % of ACCT NO. 90, 91-1 TO 91-8		2,234,025	4,744,251	6,978,276
91-10	CONTRACTOR'S PROFIT - % of ACCT NO. 90, 91-1 TO 91-8		1,117,013	2,372,125	3,489,138
	91 - SUBTOTAL	2,972,660	8,433,076	18,049,023	29,454,759
92	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	62,425,857	25,691,291	54,558,886	142,676,034
93	INDIRECT COST				
93-1	ENGINEERING, PROCUREMENT, & PROJECT SERVICES - NOT INCLUDED				
93-2	CONSTRUCTION MANAGEMENT SUPPORT - % of ACCT NO. 92				2,140,141
93-3	S-U / COMMISSIONING - % of ACCT NO. 92				1,426,760
93-4	SPARE PARTS - % of ACCT NO. 92 EQUIPMENT				1,872,776
93-5	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4				2,962,314
93-6	EPC FEE - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4				22,217,357
	93 - TOTAL				30,619,347
94	TOTAL ESCALATION				28,226,935
94-1	ESCALATION ON EQUIPMENT - % of ACCT NO. 92	8,746,016			8,746,016
94-2	ESCALATION ON MATERIAL - % of ACCT NO. 92		3,962,799		3,962,799
94-3	ESCALATION ON LABOR - % of ACCT NO. 92			10,794,100	10,794,100
94-4	ESCALATION ON INDIRECT - % of ACCT NO. 93				4,724,019
95	TOTAL CONTINGENCY				40,304,463
95-1	CONTINGENCY ON EQUIPMENT - % of ACCT NO. 92, 94.1	14,234,375			14,234,375
95-2	CONTINGENCY ON MATERIAL - % of ACCT NO. 92, 94.2		5,930,818		5,930,818
95-3	CONTINGENCY ON LABOR - % of ACCT NO. 92, 94.3			13,070,597	13,070,597
95-4	CONTINGENCY ON INDIRECT - % of ACCT NO. 93, 94.4				7,068,673

ESTIMATE NO. : 31252B  
PROJECT NO. : 12681-012  
ISSUE DATE : 10/09/2013  
PREP/REV : AT/BJD  
APPROVED : MNO

NPPD  
GERALD GENTLEMAN STATION UNIT 2 ABSORBER AREA  
WET FGD  
CONCEPTUAL COST ESTIMATE

SARGENT & LUNDY

CODE OF ACCOUNT	DESCRIPTION A	EQUIPMENT COST	MATERIAL COST	LABOR COST	TOTAL COST
96	TOTAL CONSTRUCTION COST				241,826,780
97	INTEREST DURING CONSTRUCTION ( COMPOUNDED MONTHLY)				49,414,655
98	TOTAL PROJECT COST				291,241,434

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## Question 1

ESTIMATE NO. : 31252B		NPPD		SARGENT & LUNDY						
PROJECT NO. : 12681-012		GERALD GENTLEMAN STATION UNIT 2 ABSORBER AREA								
ISSUE DATE : 10/09/2013		WET FGD								
PREP/REV : AT/BJD		CONCEPTUAL COST ESTIMATE								
APPROVED : MNO										
PRICE LEVEL: 2013		LOCATION: Omaha, NE		WAGE RATE: 13NEOMA						
				PRODUCTIVITY FACTOR: 1.1						
CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
11	<b>DEMOLITION</b>		1.1	1.051						
11-23	DUCTWORK	DEMOLITION/MODIFICATION TO EXISTING BH DUCTS	60	TN		153,600	1,056	114.49	120,901	274,501
11-23 Total						153,600	1,056		120,901	274,501
11 Total						153,600	1,056		120,901	274,501
21	<b>CIVIL WORK</b>									
21-13	CLEARING & GRUBBING									
21-13-1	CLEARING & GRUBBING	STRIP 12" TOPSOIL & STOCKPILE	7	AC			246	174.50	42,997	42,997
21-13-2	CLEARING & GRUBBING	CUT, STOCKPILE & FILL	9,500	CY			1,202	174.50	209,705	209,705
21-13 Total							1,448		252,702	252,702
21-51	MISCELLANEOUS									
21-51-1	PIPE TRENCH	6" PIPE, 4' BURIAL AND BEDDING	130	LF		724	44	72.75	3,225	3,949
21-51-2	PIPE TRENCH	2" PIPE, 4' BURIAL AND BEDDING	130	LF		446	37	72.75	2,705	3,151
21-51 Total						1,170	82		5,930	7,100
21-53	PILING & CAISSON									
21-53-1	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR COST INCLUDES LABOR	ABSORBER TOWER FOUNDATION	140	EA	374,850			110.01		374,850
21-53-2	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR COST INCLUDES LABOR	PUMP BLOWER BUILDING, ABSORBER AREA	101	EA	269,089			110.01		269,089
21-53-3	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR COST INCLUDES LABOR	DUCT SUPPORTS FOUNDATION	90	EA	240,975			110.01		240,975
21-53-4	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR COST INCLUDES LABOR	CHIMNEY SUBSTRUCTURE	120	EA	321,300			110.01		321,300
21-53-5	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR COST INCLUDES LABOR	PIPE RACK	60	EA	160,650			110.01		160,650
21-53-6	MOB/DEMOB & TEST PILE	INCLUDED IN UNIT 1&2 COMMON FACILITIES ESTIMATE		EA				110.01		
21-53 Total						1,366,864				1,366,864
21-57	ROAD, PARKING AREA, & SURFACED AREA									
21-57-1	CRUSHED ROCK SURFACING, 12"		33,350	SY		356,845	734	99.12	72,724	429,569
21-57-2	ROADWAY 24' WIDE 4" ASPHALT		1,250	FT		151,250	1,636	82.19	134,483	285,733
21-57 Total						508,095	2,370		207,208	715,303
21-99	STORM SEWER		1	LT		55,200	1,100	89.10	98,010	153,210
21-99 Total						55,200	1,100		98,010	153,210
21 Total						1,366,864	5,000		563,850	2,495,179

## Question 1

ESTIMATE NO. : 31252B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 2 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
22	<b>CONCRETE</b>									
22-13	CONCRETE									
22-13-1	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	ABSORBER TOWER FOUNDATION	1,100	CY		253,000	8,470	69.20	586,124	839,124
22-13-2	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	PUMP BLOWER BUILDING, ABSORBER AREA	1,670	CY		384,100	12,859	69.20	889,843	1,273,943
22-13-3	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	DUCT SUPPORTS FOUNDATION	400	CY		92,000	5,280	69.20	365,376	457,376
22-13-4	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	CHIMNEY FDN	2,600	CY		598,000	20,020	69.20	1,385,384	1,983,384
22-13-5	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	PIPE RACK	500	CY		115,000	6,600	69.20	456,720	571,720
22-13-6	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	ELEVATOR FOUNDATION	20	CY		4,600	198	69.20	13,702	18,302
	22-13 Total					1,446,700	53,427		3,697,148	5,143,848
	22 Total					1,446,700	53,427		3,697,148	5,143,848
23	<b>STEEL</b>									
23-15	DUCTWORK									
23-15-1	DUCTWORK PANEL SECTIONS, INCL DUCT PLATE, STIFFENERS, INTERNAL TRUSSES, TURNING VANES	ID FAN OUTLET TO BOOSTER FAN INLET	600	TN		1,950,000	39,600	111.01	4,385,996	6,345,996
23-15-2	DUCTWORK PANEL SECTIONS, INCL DUCT PLATE, STIFFENERS, INTERNAL TRUSSES, TURNING VANES	BOOSTER FAN TO SCRUBBER	300	TN		975,000	19,800	111.01	2,167,968	3,172,968
23-15-3	DUCTWORK, FRP 32" DIAMETER X 200'	SCRUBBER TO CHIMNEY	20.096	SF		3,476,608	3,095	111.01	343,552	3,820,160
	23-15 Total					6,401,608	62,495		6,937,546	13,339,154
23-17	GALLERY									
23-17-1	GRATING	PUMP BLOWER BUILDING	3,333	SF		49,995	733	86.03	63,062	113,077
23-17-2	STAIRS	PUMP BLOWER BUILDING	2,000	SF		181,056	2,530	86.03	217,656	398,712
23-17-3	HANDRAIL AND GUARDPLATE	PUMP BLOWER BUILDING	2,500	LF		132,500	1,513	86.03	130,120	262,620
23-17-4	LADDERS	PUMP BLOWER BUILDING	867	LF		60,030	587	86.03	50,496	110,526
23-17-5	SWING GATES	PUMP BLOWER BUILDING	33	EA		11,715	145	86.03	12,492	24,207
	23-17 Total					435,296	5,508		473,846	909,142
23-25	ROLLED SHAPE									
23-25-1	ROLLED SHAPE	PUMP BLOWER BUILDING	500	TN		1,280,000	8,800	107.82	948,816	2,228,816
23-25-2	ROLLED SHAPE	PUMP BLOWER BUILDING GALLERY SUPPORT STEEL	167	TN		427,520	2,939	107.82	316,905	744,425
23-25-3	ROLLED SHAPE	MISCELLANEOUS STRUCTURAL STEEL, ABSORBER AREA	100	TN		256,000	1,760	107.82	189,763	445,763
23-25-4	ROLLED SHAPE	ID FAN OUTLET TO BOOSTER FAN INLET DUCT SUPPORTS	600	TN		1,536,000	10,560	107.82	1,138,579	2,674,579
23-25-5	ROLLED SHAPE	BOOSTER FAN TO SCRUBBER DUCT SUPPORTS	100	TN		256,000	1,760	107.82	189,763	445,763

Print Date 10/9/2013 11:33 AM

Page 4 of 9

NPPDRH114\_0006408

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## Question 1

ESTIMATE NO. : 31252B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 2 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
23-25-6	ROLLED SHAPE	SCRUBBER TO CHIMNEY DUCT SUPPORTS	200	TN		512,000	3,520	107.82	379,526	891,526
23-25-7	ROLLED SHAPE	PIPE RACK STRUCTURAL STEEL	300	TN		813,000	5,610	107.82	604,870	1,417,870
23-25 Total						5,080,520	34,949		3,768,223	8,848,743
23 Total						11,917,424	102,952		11,179,815	23,097,039
24	<b>ARCHITECTURAL</b>									
24-15	DOOR (INCL. FRAME & HARDWARE)									
24-15-1	MANDOORS	PUMP BLOWER BUILDING	3	EA		4,712	26	59.60	1,573	6,285
24-15-2	ROLLUP DOOR	PUMP BLOWER BUILDING	1	EA		17,335	44	59.60	2,622	19,957
24-15 Total						22,047	70		4,196	26,243
24-17	ELEVATOR									
24-17-1	ELEVATOR	RACK & PINION	1	EA	367,710		1,375	103.44	142,230	509,940
24-17 Total					367,710		1,375		142,230	509,940
24-37	ROOFING									
24-37-1	INSULATED METAL ROOFING	PUMP BLOWER BUILDING	14,000	SF		231,840	1,371	67.65	92,721	324,561
24-37 Total						231,840	1,371		92,721	324,561
24-41	SIDING									
24-41-1	INSULATED METAL SIDING	PUMP BLOWER BUILDING	24,000	SF		397,440	2,350	95.90	225,327	622,767
24-41 Total						397,440	2,350		225,327	622,767
24 Total					367,710	651,327	5,166		464,474	1,483,510
25	<b>CONCRETE CHIMNEY &amp; STACK</b>									
25-13	CONCRETE CHIMNEY	CHIMNEY STRUCTURE, CONCRETE W/ SINGLE FRP LINER, 550' HIGH - HAMON CUSTODIS BUDGETARY QUOTE	1	EA	13,492,856					13,492,856
25-13 Total					13,492,856					13,492,856
25 Total					13,492,856					13,492,856
27	<b>PAINTING &amp; COATING</b>									
27-17	PAINTING									
27-17-1	TOUCH-UP PAINTING	PUMP BLOWER BUILDING	28,000	SF		28,000	616	74.48	45,880	73,880
27-17 Total						28,000	616		45,880	73,880
27 Total						28,000	616		45,880	73,880
31	<b>MECHANICAL EQUIPMENT</b>									
31-27	DAMPERS & ACCESSORIES									

Print Date 10/9/2013 11:33 AM

Page 5 of 9

NPPDRH114\_0006409

ED\_005798\_00000590-00027

## Question 1

ESTIMATE NO. : 31252B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 2 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
31-27-1	DAMPERS	BOOSTER FANS - BASED ON THE ESTIMATED ADDITIONAL COST PROVIDED BY TLT BABCOCK	2	EA	168,096		858	111.01	95,247	263,343
31-27 Total					168,096		858		95,247	263,343
31-33	EXPANSION JOINT									
31-33-1	EXPANSION JOINT	ID FAN OUTLET TO BOOSTER FAN INLET	1,100	LF		275,000	2,420	111.01	268,644	543,644
31-33-2	EXPANSION JOINT	BOOSTER FAN TO SCRUBBER	230	LF		57,500	506	111.01	56,171	113,671
31-33-3	EXPANSION JOINT	SCRUBBER TO CHIMNEY	320	LF		80,000	704	111.01	78,151	158,151
31-33 Total						412,500	3,630		402,956	815,466
31-41	FIRE PROTECTION EQUIPMENT & SYSTEM									
31-41-1	FIRE PROTECTION EQUIPMENT & SYSTEM	PUMP BLOWER BUILDING	28,000	SF		140,000	2,064	85.91	177,284	317,284
31-41 Total						140,000	2,064		177,284	317,284
31-45	FLUE GAS CLEANUP, FGD EQUIPMENT							85.91		
31-45-1	ABSORBER AREA SYSTEM	BASED ON BABCOCK POWER BUGETARY EQUIPMENT PRICE INCLUDES ABSORBER VESSEL ERECTION. LABOR COST IS FOR MECHANICAL EQUIPMENT ERECTION	1	LS	43,759,591		184,800	85.91	15,876,168	59,635,759
31-45 Total					43,759,591		184,800		15,876,168	59,635,759
31-75	PUMP									
31-75-1	PUMP	QUENCH PUMPS	1	LT	165,600		880	84.96	74,765	240,365
31-75 Total					165,600		880		74,765	240,365
31-99	MODEL STUDIES		1	EA	132,480			85.91		132,480
31-99 Total					132,480					132,480
31 Total					44,225,767	552,500	192,232		16,626,430	61,404,697
34	HVAC									
34-99	HVAC	PUMP BLOWER BUILDING	28,000	SF		560,000	4,620	80.72	372,926	932,926
34-99 Total						560,000	4,620		372,926	932,926
34 Total						560,000	4,620		372,926	932,926
35	PIPING									
35-13	LARGE BORE PIPING									
35-13-1	6" CS SCH 40 HT, INSULATED PIPING	ABOVE GROUND PIPING	1,380	LF		44,298	2,444	93.61	228,781	273,079
35-13-2	6" CS SCH 40 PIPING	ABOVE GROUND PIPING	130	LF		4,173	230	93.61	21,552	25,725
35-13-3	6" FRP PIPING	ABOVE GROUND PIPING	1,630	LF		66,830	1,255	93.61	117,490	184,320

Print Date 10/9/2013 11:33 AM

Page 6 of 9

NPPDRH114\_0006410

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## Question 1

ESTIMATE NO. : 31252B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT & LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 2 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
35-13-4	6" HDPE, SDR 9 PIPING	BURIED PIPING	130	LF		1,170	99	89.10	8,791	9,961
35-13-5	4" FRP PIPING	ABOVE GROUND PIPING	2,510	LF		76,555	1,132	93.61	105,967	182,522
35-13-6	3" CS SCH 40 PIPING	ABOVE GROUND PIPING	1,260	LF		22,050	1,857	93.61	173,856	195,906
35-13-7	2.5" FRP PIPING	ABOVE GROUND PIPING	60	LF		1,548	22	93.61	2,039	3,587
35-13-8	VALVES	6" SS GATE VALVE, FLANGED, 150LB	3	EA		11,189	53	93.61	4,943	16,131
35-13-9	VALVES	6" CI POST INDICATOR 250LB, MECHANICAL JOINT WITH BOXES	3	EA		2,222	13	93.61	1,236	3,458
35-13-10	VALVES	4" SS GATE VALVE, FLANGED, 150LB	4	EA		8,615	53	93.61	4,984	13,599
35-13-11	VALVES	3" VALVES FOR SERVICE WATER ISOLATION	40	EA		42,024	343	93.61	32,127	74,151
35-13-12	VALVES	3" VALVES FOR SERVICE AIR ISOLATION	40	EA		42,024	343	93.61	32,127	74,151
35-13 Total						322,698	7,845		733,893	1,056,591
35-15	SMALL BORE PIPING							93.61		
35-15-1	2" CS SCH 80 PIPING	ABOVE GROUND PIPING	325	LF		6,523	408	93.61	38,151	45,073
35-15-2	2" CS/RL SCH 40 PIPING	ABOVE GROUND PIPING	130	LF		3,900	44	93.61	4,150	8,050
35-15-3	2" SS 304 SCH 40 PIPING	ABOVE GROUND PIPING	1,130	LF		29,041	1,790	93.61	167,554	196,595
35-15-4	2" CS SCH 80 PIPING	BURIED PIPING	130	LF		2,223	103	93.61	9,638	11,861
35-15-5	1" SS 304 SCH 40S PIPING	ABOVE GROUND PIPING	130	LF		2,808	162	93.61	15,126	17,934
35-15-6	VALVES	2" SS VALVES FOR INSTRUMENT AIR ISOLATION	200	EA		177,551	160	93.61	14,972	192,523
35-15 Total						222,446	2,666		249,591	472,037
35-99	BOP PIPING & VALVES	FOR QUENCH PUMPS	1	LT		55,200	906	93.61	84,848	140,048
35-99 Total						55,200	906		84,848	140,048
35 Total						600,344	11,417		1,068,332	1,668,676
36	INSULATION									
36-13	INSULATION, DUCT & EQUIPMENT									
36-13-1	MINERAL WOOL INSULATION 4" THK, 8 LB/CF DENSITY, ALUMINUM LAGGING - INSTALLED IN PLACE	ID FAN OUTLET TO BOOSTER FAN INLET	52,000	SF		312,000	17,160	79.31	1,360,980	1,672,980
36-13-2	MINERAL WOOL INSULATION 4" THK, 8 LB/CF DENSITY, ALUMINUM LAGGING - INSTALLED IN PLACE	BOOSTER FAN TO SCRUBBER	25,000	SF		150,000	8,250	79.31	654,308	804,308
36-13 Total						462,000	25,410		2,015,267	2,477,267
36-15	INSULATION, PIPE									
36-15-1	INSULATION, PIPE	3" CAL SIL INSULATION FOR 6" PIPE	1,380	LF		41,855	758	60.80	46,101	87,956
36-15 Total						41,855	758		46,101	87,956
36 Total						503,855	26,168		2,061,368	2,565,224

Print Date 10/9/2013 11:33 AM

Page 7 of 9

NPPDRH114\_0006411

ED\_005798\_00000590-00029

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 GERALD GENTLEMAN STATION UNIT 2 ABSORBER AREA  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
41	<b>ELECTRICAL EQUIPMENT</b>									
41-37	LIGHTING ACCESSORY (FIXTURE)									
41-37-1	LIGHTING ACCESSORY (FIXTURE)	PUMP BLOWER BUILDING	28,000	SF		280,000	4,620	66.87	308,939	588,939
	41-37 Total					280,000	4,620		308,939	588,939
41-41	ELECTRICAL MISCELLANEOUS	INCLUDED IN AUX POWER & FAN ESTIMATE	1	EA				72.95		
	41-41 Total									
	41 Total					280,000	4,620		308,939	588,939
44	<b>CONTROL &amp; INSTRUMENTATION</b>									
44-23	INSTRUMENTATION MISCELLANEOUS	INCLUDED IN UNIT 1&2 COMMON FACILITIES ESTIMATE	1	EA				79.39		
	44-23 Total									
	44 Total									
90	SUBTOTAL DIRECT & CONSTRUCTION INDIRECT COST				59,453,197	17,258,215	407,273		36,509,864	113,221,275
91	OTHER DIRECT & CONSTRUCTION INDIRECT COST									
91-1	SCAFFOLDING - % of ACCT NO. 90		2.5	%					1,344,202	1,344,202
91-2	COST DUE TO OVERTIME WORKING 5 -10 HOUR DAYS		1.0	EA			35,415		5,246,871	5,246,871
91-3	PER DIEM		10.0	\$/HR					4,072,733	4,072,733
91-4	CONSUMABLES - % of ACCT NO. 90		0.5	%					268,840	268,840
91-5	FREIGHT ON MATERIAL - % of ACCT NO. 90		5.0	%		862,911			862,911	862,911
91-6	FREIGHT ON EQUIPMENT - % of ACCT NO. 90		5.0	%	2,972,660				2,972,660	2,972,660
91-7	SALES TAX - % of ACCT NO. 90 MATERIAL & EQUIPMENT SHOWN ON MATERIAL COLUMN		5.5	%		4,219,128			4,219,128	4,219,128
91-8	MOBILIZATION/DEMOBILIZATION - NOT INCLUDED	INCLUDED WITH WAGE RATES		%						
91-9	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE - % of ACCT NO. 90, 91-1 TO 91-8		10.0	%		2,234,025			4,744,251	6,978,276
91-10	CONTRACTOR'S PROFIT - % of ACCT NO. 90, 91-1 TO 91-8		5.0	%		1,117,013			2,372,125	3,489,138
	91 - SUBTOTAL				2,972,660	8,433,076			18,049,023	29,454,759
92	TOTAL DIRECT & CONSTRUCTION INDIRECT COST				62,425,857	25,691,291	442,688		54,558,888	142,676,034
93	INDIRECT COST									
93-1	ENGINEERING, PROCUREMENT, & PROJECT SERVICES - NOT INCLUDED	INCLUDED IN UNIT 1&2 COMMON FACILITIES								

Print Date 10/9/2013 11:33 AM

Page 8 of 9

NPPDRH114\_0006412

ED\_005798\_00000590-00030

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 WET FGD  
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PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
93-2	CONSTRUCTION MANAGEMENT SUPPORT - % of ACCT NO. 92		1.5	%						2,140,141
93-3	S-U / COMMISSIONING - % of ACCT NO. 92		1.0	%						1,426,760
93-4	SPARE PARTS - % of ACCT NO. 92 EQUIPMENT		3.0	%						1,872,776
93-5	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4		2.0	%						2,962,314
93-6	EPC FEE - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4		15.0	%						22,217,357
93 - TOTAL										30,619,347
94	TOTAL ESCALATION									28,226,935
94-1	ESCALATION ON EQUIPMENT - % of ACCT NO. 92		14.0	%	8,746,016					8,746,016
94-2	ESCALATION ON MATERIAL - % of ACCT NO. 92		15.4	%		3,962,799				3,962,799
94-3	ESCALATION ON LABOR - % of ACCT NO. 92		19.6	%					10,794,100	10,794,100
94-4	ESCALATION ON INDIRECT - % of ACCT NO. 93		15.4	%						4,724,019
95	TOTAL CONTINGENCY									40,304,463
95-1	CONTINGENCY ON EQUIPMENT - % of ACCT NO. 92, 94.1		20.0	%	14,234,375					14,234,375
95-2	CONTINGENCY ON MATERIAL - % of ACCT NO. 92, 94.2		20.0	%		5,930,818				5,930,818
95-3	CONTINGENCY ON LABOR - % of ACCT NO. 92, 94.3		20.0	%					13,070,597	13,070,597
95-4	CONTINGENCY ON INDIRECT - % of ACCT NO. 93, 94.4		20.0	%						7,068,673
96	TOTAL CONSTRUCTION COST									241,826,780
97	INTEREST DURING CONSTRUCTION ( COMPOUNDED MONTHLY)									49,414,655
98	TOTAL PROJECT COST									291,241,434

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SARGENT & LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1&2 COMMON FACILITIES  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

CODE OF ACCOUNT	DESCRIPTION A	EQUIPMENT COST	MATERIAL COST	LABOR COST	TOTAL COST
11 Total	DEMOLITION			356,968	356,968
21 Total	CIVIL WORK	1,767,919	659,837	1,609,727	4,037,483
22 Total	CONCRETE		3,281,640	9,315,261	12,596,901
23 Total	STEEL		10,599,370	8,123,430	18,722,800
24 Total	ARCHITECTURAL		4,453,010	2,783,645	7,236,654
27 Total	PAINTING & COATING		172,504	282,658	455,162
31 Total	MECHANICAL EQUIPMENT	42,860,594	162,000	24,127,160	67,149,754
33 Total	MATERIAL HANDLING EQUIPMENT	8,121,138		4,830,325	12,951,463
34 Total	HVAC	42,024			42,024
33 Total	MATERIAL HANDLING EQUIPMENT	18,956,025		2,759,104	21,715,129
34 Total	HVAC	1,324,800	540,000	1,806,029	3,670,829
35 Total	PIPING		2,011,353	3,806,210	5,817,563
36 Total	INSULATION		16,025	47,016	63,041
41 Total	ELECTRICAL EQUIPMENT	883,200	349,062	1,970,788	3,203,050
44 Total	CONTROL & INSTRUMENTATION	1,313,250		418,306	1,731,556
60 Total	CONSTRUCTION EQUIPMENT SUPPLEMENT				
90	SUBTOTAL DIRECT & CONSTRUCTION INDIRECT COST	75,268,950	22,244,801	62,236,627	159,750,378
91	OTHER DIRECT & CONSTRUCTION INDIRECT COST				
91-1	SCAFFOLDING - % of ACCT NO. 90			2,112,036	2,112,036
91-2	COST DUE TO OVERTIME WORKING 5 -10 HOUR DAYS			8,969,804	8,969,804
91-3	PER DIEM			7,238,290	7,238,290
91-4	CONSUMABLES - % of ACCT NO. 90			422,407	422,407
91-5	FREIGHT ON MATERIAL - % of ACCT NO. 90		1,112,240		1,112,240
91-6	FREIGHT ON EQUIPMENT - % of ACCT NO. 90	3,763,448			3,763,448
91-7	SALES TAX - % of ACCT NO. 90 MATERIAL & EQUIPMENT SHOWN ON MATERIAL COLUMN		5,363,256		5,363,256
91-8	MOBILIZATION/DEMOLIZATION - NOT INCLUDED				
91-9	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE - % of ACCT NO. 90, 91-1 TO 91-8		2,872,030	8,097,916	10,969,946
91-10	CONTRACTOR'S PROFIT - % of ACCT NO. 90, 91-1 TO 91-8		1,436,015	4,048,958	5,484,973
	91 - SUBTOTAL	3,763,448	10,783,541	30,889,411	45,436,400
92	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	79,032,398	33,028,342	93,126,038	205,186,778
93	INDIRECT COST				
93-1	ENGINEERING, PROCUREMENT, & PROJECT SERVICES - UNIT 1				12,600,000
93-2	ENGINEERING, PROCUREMENT, & PROJECT SERVICES - UNIT 2				8,820,000
93-3	ENGINEERING, PROCUREMENT, & PROJECT SERVICES FOR AUX POWER AND ID FANS - UNIT 1				1,890,000
93-4	ENGINEERING, PROCUREMENT, & PROJECT SERVICES FOR AUX POWER AND ID FANS - UNIT 2				1,260,000
93-5	CONSTRUCTION MANAGEMENT SUPPORT - % of ACCT NO. 92				3,077,802
93-6	S-U / COMMISSIONING - % of ACCT NO. 92				2,051,868
93-7	SPARE PARTS - % of ACCT NO. 92 EQUIPMENT				2,370,972
93-8	OWNERS ENGINEERING COST - UNIT 1				1,980,000
93-9	OWNERS ENGINEERING COST - UNIT 2				1,452,000
93-10	OWNERS BOND FEES @ 2.5% OF \$200,000,000				5,000,000
93-11	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4				4,745,148
93-12	EPC FEE - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4				35,588,613



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 WET FGD  
 CONCEPTUAL COST ESTIMATE

SARGENT & LUNDY

CODE OF ACCOUNT	DESCRIPTION A	EQUIPMENT COST	MATERIAL COST	LABOR COST	TOTAL COST
93	TOTAL				80,836,403
94	TOTAL ESCALATION				38,410,754
94-1	ESCALATION ON EQUIPMENT - % of ACCT NO. 92	8,874,950			8,874,950
94-2	ESCALATION ON MATERIAL - % of ACCT NO. 92		4,164,690		4,164,690
94-3	ESCALATION ON LABOR - % of ACCT NO. 92			15,175,306	15,175,306
94-4	ESCALATION ON INDIRECT - % of ACCT NO. 93				10,195,809
95	TOTAL CONTINGENCY				64,886,787
95-1	CONTINGENCY ON EQUIPMENT - % of ACCT NO. 92, 94.1	17,581,470			17,581,470
95-2	CONTINGENCY ON MATERIAL - % of ACCT NO. 92, 94.2		7,438,607		7,438,607
95-3	CONTINGENCY ON LABOR - % of ACCT NO. 92, 94.3			21,660,269	21,660,269
95-4	CONTINGENCY ON INDIRECT - % of ACCT NO. 93, 94.4				18,206,442
96	TOTAL CONSTRUCTION COST				389,320,722
97	INTEREST DURING CONSTRUCTION ( COMPOUNDED MONTHLY)				76,682,880
98	TOTAL PROJECT COST				466,003,602

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PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
11	<b>DEMOLITION</b>		1.1	1.051						
11-21	CIVIL WORK									
11-21-1	DISPOSAL, LOAD AND HAUL DEBRIS OFF SITE	DEMOLISH WAREHOUSE NO. 1 100'X120'X15'	2,000	CY			242	114.49	27,707	27,707
	11-21 Total						242		27,707	27,707
11-22	CONCRETE									
11-22-1	FOUNDATION DEMOLITION, REBAR REINFORCED	DEMOLISH WAREHOUSE NO. 1 100'X120'X15'	12,000	SF			1,122	114.49	128,458	128,458
	11-22 Total						1,122		128,458	128,458
11-23	STEEL									
11-23-1	STEEL BUILDING DEMOLITION, NO SALVAGE ALLOWANCE, NO DUMP FEES	DEMOLISH WAREHOUSE NO. 1 100'X120'X15'	180,000	CF			594	114.49	68,007	68,007
	11-23 Total						594		68,007	68,007
11-24	ARCHITECTURAL									
11-24-1	RELOCATION OF HYDROGEN BUILDING (40'X20'X15')		800	SF			1,144	107.82	123,346	123,346
11-24-2	RELOCATION OF TRANSFORMER OIL INTERCEPTORS (OIL/WATER SEPARATOR, BURIED)		1	EA			110	85.91	9,450	9,450
	11-24 Total						1,254		132,796	132,796
	11 Total						3,212		356,968	356,968
21	<b>CIVIL WORK</b>									
21-13	CLEARING & GRUBBING									
21-13-1	CLEARING & GRUBBING	STRIP 12" TOPSOIL & STOCKPILE	9	AC			324	174.50	56,510	56,510
21-13-2	CLEARING & GRUBBING	CUT, STOCKPILE & FILL	40,000	CY			5,060	174.50	882,970	882,970
	21-13 Total						5,384		939,480	939,480
21-23	EARTHWORK, EXCAVATION, MASS									
21-23-1	EXCAVATION, BACKFILL AND COMPACTION	TRACK HOPPER	4,000	CY			660	72.75	48,015	48,015
21-23-2	EXCAVATION, BACKFILL AND COMPACTION	CONVEYOR TUNNELS	6,000	CY			990	72.75	72,023	72,023
21-23-3	EXCAVATION, BACKFILL AND COMPACTION	RECLAIM HOPPER	4,860	CY			805	72.75	58,578	58,578
	21-23 Total						2,455		178,616	178,616
21-51	MISCELLANEOUS									
21-51-1	PIPE TRENCH	6" PIPE, 4' BURIAL AND BEDDING	1,530	LF		8,522	522	72.75	37,956	46,478
21-51-2	PIPE TRENCH	12" PIPE, 4' BURIAL AND BEDDING	8,130	LF		76,178	3,398	72.75	247,229	323,407
21-51-3	PIPE TRENCH	3" PIPE, 4' BURIAL AND BEDDING	3,030	LF		11,838	900	72.75	65,468	77,407
21-51-4	PIPE TRENCH	2" PIPE, 4' BURIAL AND BEDDING	100	LF		343	29	72.75	2,081	2,424

Print Date 10/9/2013 9:07 AM

Page 3 of 13

NPPDRH114\_0006416

ED\_005798\_00000590-00034

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PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

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21-51-5	PIPE TRENCH	1.5" PIPE, 4' BURIAL AND BEDDING	700	LF		2,233	200	72.75	14,565	16,798
21-51-6	DRAINAGE TRENCH	CAR THAWING SHED	600	LF		82,800	264	69.20	18,269	101,069
21-51-7	SUMP	DRAINAGE SYSTEM	10	CY		2,208	132	69.20	9,134	11,342
21-51 Total						184,222	5,445		384,702	578,924
21-53	PILING & CAISSON									
21-53-1	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR REAGENT PREP BUILDING COST INCLUDES LABOR		90	EA	240,975			110.01		240,975
21-53-2	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR DEWATERING BUILDING COST INCLUDES LABOR		75	EA	200,813			110.01		200,813
21-53-3	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR ZLD BUILDING COST INCLUDES LABOR		90	EA	240,975			110.01		240,975
21-53-4	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR TANK FOUNDATIONS COST INCLUDES LABOR		180	EA	481,950			110.01		481,950
21-53-5	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR TRACK HOPPER COST INCLUDES LABOR		30	EA	80,325			110.01		80,325
21-53-6	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR LH RECLAIM HOPPER COST INCLUDES LABOR		30	EA	80,325			110.01		80,325
21-53-7	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR LH CONVEYOR FOUNDATIONS COST INCLUDES LABOR		75	EA	200,813			110.01		200,813
21-53-8	AUGER CAST PILES 18" DIA. X 70' LONG. SUBCONTRACTOR GH CONVEYOR FOUNDATIONS COST INCLUDES LABOR		23	EA	60,244			110.01		60,244
21-53-9	PILE TEST		1	EA	81,500			110.01		81,500
21-53-10	MOB/DEMOB		1	EA	100,000			110.01		100,000
21-53 Total						1,767,919				1,767,919
21-57	ROAD, PARKING AREA, & SURFACED AREA									
21-57-1	CRUSHED ROCK SURFACING, 12", COMPACTED		44,450	SY		475,615	978	99.12	96,929	572,544
21-57 Total						475,615	978		96,929	572,544
21 Total						1,767,919	14,262		1,609,727	4,037,483
22	CONCRETE									
22-13	CONCRETE									
22-13-1	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	REAGENT PREP BUILDING	3,400	CY		782,000	26,180	69.20	1,811,656	2,593,656
22-13-2	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	DEWATERING BUILDING	2,700	CY		621,000	20,790	69.20	1,438,668	2,059,668
22-13-3	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	ZLD BUILDING	1,200	CY		276,000	11,880	69.20	822,096	1,098,096
22-13-4	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	DIESEL GENERATOR FOUNDATION	70	CY		16,100	693	69.20	47,956	64,056
22-13-5	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	TANK FOUNDATIONS	600	CY		138,000	4,620	69.20	319,704	457,704
22-13-6	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	NEW WAREHOUSE FOUNDATIONS	700	CY		161,000	5,390	69.20	372,968	533,968

Print Date 10/9/2013 9:07 AM

Page 4 of 13

NPPDRH114\_0006417

ED\_005798\_00000590-00035

## Question 1

ESTIMATE NO. : 31250B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1&2 COMMON FACILITIES  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
22-13-7	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	TRACK HOPPER	1,700	CY		391,000	16,830	69.20	1,164,636	1,555,636
22-13-8	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	LH RECLAIM HOPPER	1,500	CY		345,000	19,800	69.20	1,370,160	1,715,160
22-13-9	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	LH CONVEYOR TUNNELS	1,260	CY		289,800	16,632	69.20	1,150,934	1,440,734
22-13-10	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	LH CONVEYOR FOUNDATIONS	300	CY		69,000	3,960	69.20	274,032	343,032
22-13-11	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	GH CONVEYOR FOUNDATIONS	100	CY		23,000	1,320	69.20	91,344	114,344
22-13-12	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	MAINTENANCE GARAGE	175	CY		40,940	1,371	69.20	94,846	135,786
22-13-13	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	CAR THAWING SHED FOUNDATION	320	CY		73,600	3,168	69.20	219,226	292,826
22-13-14	CONCRETE FLOORS	LH CONVEYOR GALLERY FLOORS	140	CY		32,200	1,078	69.20	74,598	106,798
22-13-15	CONCRETE FLOORS	GH CONVEYOR GALLERY FLOORS	40	CY		9,200	308	69.20	21,314	30,514
22-13-16	CONCRETE (INCLUDES REBAR, FORMWORK, EMBEDMENTS & EARTHWORK)	RELOCATED HYDROGEN BUILDING	60	CY		13,800	594	69.20	41,105	54,905
22-13 Total						3,281,640	134,614		9,315,261	12,596,901
22 Total						3,281,640	134,614		9,315,261	12,596,901
23	<b>STEEL</b>									
23-17	GALLERY									
23-17-1	GALLERY	GALLERY&STAIRS REAGENT PREP BUILDING	28,400	SF		1,014,459	10,309	86.03	886,900	1,901,360
23-17-2	GALLERY	GALLERY&STAIRS DEWATERING BUILDING	22,200	SF		792,993	8,059	86.03	693,261	1,486,274
23-17-3	GALLERY	GALLERY&STAIRS ZLD BUILDING	5,000	SF		178,602	1,815	86.03	156,144	334,746
23-17-3	GALLERY	TRACK CROSS-OVER UNLOADING AREA	500	SF		17,860	182	86.03	15,614	33,475
23-17 Total						2,003,914	20,364		1,751,941	3,755,855
23-25	ROLLED SHAPE							107.82		
23-25-1	ROLLED SHAPE	REAGENT PREP BUILDING	1,800	TN		4,608,000	31,680	107.82	3,415,736	8,023,736
23-25-2	ROLLED SHAPE	DEWATERING BUILDING	1,200	TN		3,072,000	21,120	107.82	2,277,158	5,349,158
23-25-3	ROLLED SHAPE	ZLD BUILDING	260	TN		665,600	4,576	107.82	493,384	1,158,984
23-25-4	ROLLED SHAPE	CAR THAWING SHED	81	TN		207,360	1,426	107.82	153,708	361,068
23-25-5	ROLLED SHAPE	FROZEN LIMESTONE CRACKERS SUPPORT STEEL	17	TN		42,496	292	107.82	31,501	73,997
23-25 Total						8,595,456	59,094		6,371,489	14,966,945
23 Total						10,599,370	79,458		8,123,430	18,722,800

Print Date 10/9/2013 9:07 AM

Page 5 of 13

NPPDRH114\_0006418

ED\_005798\_00000590-00036

## Question 1

ESTIMATE NO. : 31250B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1&2 COMMON FACILITIES  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
24	<b>ARCHITECTURAL</b>									
24-15	DOOR (INCL. FRAME & HARDWARE)									
24-15-1	MANDOORS	CAR THAWING SHED	4	EA		6,283	35	59.60	2,098	8,381
24-15-2	ROLLUP DOORS MOTORIZED	CAR THAWING SHED	2	EA		33,120	88	59.60	5,245	38,365
24-15-1	MANDOORS	REAGENT PREP BUILDING	3	EA		4,712	26	59.60	1,573	6,285
24-15-2	ROLLUP DOORS MOTORIZED	REAGENT PREP BUILDING	1	EA		16,560	44	59.60	2,622	19,182
24-15-1	MANDOORS	DEWATERING BUILDING	3	EA		4,712	26	59.60	1,573	6,285
24-15-2	ROLLUP DOORS MOTORIZED	DEWATERING BUILDING	1	EA		16,560	44	59.60	2,622	19,182
24-15-1	MANDOORS	ZLD BUILDING	3	EA		4,712	26	59.60	1,573	6,285
24-15-2	ROLLUP DOORS MOTORIZED	ZLD BUILDING	1	EA		16,560	44	59.60	2,622	19,182
24-15 Total						103,218	334		19,930	123,149
24-35	PRE-ENGINEERED BUILDING									
24-35-1	PRE-ENGINEERED BUILDING	NEW WAREHOUSE BLDG 100' X 120' X 15' HIGH	12,000	SF		474,278	5,861	107.82	631,911	1,106,190
24-35-2	PRE-ENGINEERED BUILDING	MAINTENANCE GARAGE 40'X40'X20'	1,600	SF		132,480	1,408	107.82	151,811	284,291
24-35-3	PRE-ENGINEERED BUILDING	EXPAND MAIN ELECTRICAL BUILDING, CAR THAWING SHED	2	EA		63,036	440	107.82	47,441	110,477
24-35-4	PRE-ENGINEERED BUILDING	PUMP HOUSES 2 X 10'X14', MAKEUP WATER WELL PUMP HOUSE	280	SF		29,417	308	107.82	33,209	62,625
24-35 Total						699,211	8,017		864,371	1,563,583
24-37	ROOFING									
24-37-1	ROOFING	INSULATED METAL ROOFING, REAGENT PREP BUILDING	28,400	SF		470,304	2,780	67.65	188,091	658,395
24-37-2	ROOFING	INSULATED METAL ROOFING, DEWATERING BUILDING	22,200	SF		367,632	2,173	67.65	147,029	514,661
24-37-3	ROOFING	INSULATED METAL ROOFING, ZLD BUILDING	10,000	SF		165,600	979	67.65	66,229	231,829
24-37-4	ROOFING	INSULATED ROOFING, NEW WAREHOUSE	12,000	SF		198,720	1,175	67.65	79,475	278,195
24-37-5	UNINSULATED ROOFING & SIDING	CAR THAWING SHED	25,200	SF		81,900	1,137	67.65	76,886	158,786
24-37 Total						1,284,156	8,244		557,711	1,841,867
24-41	SIDING							95.90		
24-41-1	SIDING	INSULATED SIDING, REAGENT PREP BUILDING	67,600	SF		1,119,456	6,618	95.90	634,670	1,754,126
24-41-2	SIDING	INSULATED SIDING, DEWATERING BUILDING	50,700	SF		839,592	4,964	95.90	476,003	1,315,595
24-41-3	SIDING	INSULATED SIDING, ZLD BUILDING	18,000	SF		298,080	1,762	95.90	168,995	467,075
24-41-4	SIDING	INSULATED SIDING, NEW WAREHOUSE	6,600	SF		109,296	646	95.90	61,965	171,261

Print Date 10/9/2013 9:07 AM

Page 6 of 13

NPPDRH114\_0006419

ED\_005798\_00000590-00037

## Question 1

ESTIMATE NO. : 31250B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1&2 COMMON FACILITIES  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
24-41 Total						2,366,424	13,990		1,341,632	3,708,056
24 Total						4,453,010	30,585		2,783,645	7,236,654
27	<b>PAINTING &amp; COATING</b>									
27-17	PAINTING									
27-17-1	PAINTING	TOUCH-UP PAINTING ALLOWANCE, REAGENT PREP BUILDING	56,800	SF		56,800	1,250	74.48	93,070	149,870
27-17-2	PAINTING	TOUCH-UP PAINTING ALLOWANCE, DEWATERING BUILDING	88,704	SF		88,704	1,861	74.48	145,347	234,051
27-17-3	PAINTING	TOUCH-UP PAINTING ALLOWANCE, ZLD BUILDING	15,000	SF		15,000	330	74.48	24,578	39,578
27-17-4	PAINTING	TOUCH-UP PAINTING ALLOWANCE, NEW WAREHOUSE	12,000	SF		12,000	264	74.48	19,683	31,683
27-17 Total						172,504	3,795		282,658	455,162
27 Total						172,504	3,795		282,658	455,162
31	<b>MECHANICAL EQUIPMENT</b>									
31-17	COMPRESSOR & ACCESSORIES									
31-17-1	AIR COMPRESSOR, 650 SCFM/EA @ 100 PSIG		3	EA	463,680		1,320	85.91	113,401	577,081
31-17-2	RECEIVERS, 1000 GAL/EA		2	EA	11,040		66	85.91	5,670	16,710
31-17-3	IA DRYERS W/FILTERS, 1300 NET SCFM/EA		2	EA	33,120		70	85.91	6,048	39,168
31-17 Total					507,840		1,456		125,119	632,959
31-41	FIRE PROTECTION EQUIPMENT & SYSTEM									
31-41-1	FIRE PROTECTION EQUIPMENT & SYSTEM	ALLOWANCE, REAGENT PREP BUILDING	1	LS	414,000		5,554	93.61	519,901	933,901
31-41-2	FIRE PROTECTION EQUIPMENT & SYSTEM	ALLOWANCE, DEWATERING BUILDING	1	LS	251,712		3,369	93.61	315,400	567,112
31-41-3	FIRE PROTECTION EQUIPMENT & SYSTEM	ALLOWANCE, ZLD BUILDING	15,000	SF		90,000	330	93.61	30,891	120,891
31-41-4	FIRE PROTECTION EQUIPMENT & SYSTEM	ALLOWANCE, NEW WAREHOUSE	12,000	SF		72,000	264	93.61	24,713	96,713
31-41 Total					665,712	162,000	9,517		890,905	1,718,617
31-45	FLUE GAS CLEANUP, FGD EQUIPMENT									
31-45-1	REAGENT PREP SYSTEM	SYSTEM BASED ON BABCOCK POWER BUJETARY PRICE	1	LS	19,448,707		114,400	85.91	9,828,104	29,276,811
31-45-2	DEWATERING SYSTEM	SYSTEM BASED ON BABCOCK POWER BUJETARY PRICE	1	LS	14,586,530		85,690	85.91	7,361,628	21,948,158
31-45 Total					34,035,238		200,090		17,189,732	51,224,970

Print Date 10/9/2013 9:07 AM

Page 7 of 13

NPPDRH114\_0006420

ED\_005798\_00000590-00038

## Question 1

ESTIMATE NO. : 31250B  
 PROJECT NO. : 12681-012  
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 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1&2 COMMON FACILITIES  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
31-63	GENERATOR									
31-63-1	EMERGENCY DIESEL GENERATOR		1	EA	264,960		880	75.25	66,220	331,180
	31-63 Total				264,960		880		66,220	331,180
31-75	PUMP									
31-75-1	PUMP	MAKEUP WATER PUMPS, 3000 GPM X 200 TDH	2	EA	95,606		552	84.96	46,915	142,521
31-75-2	PUMP	MAKEUP WELL PUMPS, 2600 GPM	2	EA	95,606		552	84.96	46,915	142,521
31-75-3	PUMP	REAGENT PREP SUMP PUMP, 200GPM, 150TDH - SUPPLY OF PUMP INCLUDED IN FGD SUPPLIER QUOTE	2	EA			132	84.96	11,215	11,215
31-75-4	PUMP	DEWATERING BUILDING SUMP PUMP, 200GPM, 150TDH - SUPPLY OF PUMP INCLUDED IN FGD SUPPLIER QUOTE	2	EA			132	84.96	11,215	11,215
31-75-5	PUMP	LIMESTONE TRACK HOPPER SUMP PUMP, 120GPM, 150TDH - SUPPLY OF PUMP INCLUDED IN R&S, LH SUPPLIER QUOTE	2	EA			88	84.96	7,476	7,476
31-75-6	PUMP	LIMESTONE RECLAIM HOPPER SUMP PUMP, 200GPM, 150TDH - SUPPLY OF PUMP INCLUDED IN R&S, LH SUPPLIER QUOTE	2	EA			132	84.96	11,215	11,215
31-75-7	PUMP	WASTEWATER FORWARDING PUMP, 100GPM, 150TDH	2	EA	14,352		141	84.96	11,962	26,314
31-75-8	PUMP	SUMP PUMP DRAINAGE SYSTEM	2	EA	6,624		53	84.96	4,496	11,110
	31-75 Total				212,189		1,782		151,399	363,588
31-83	TANK									
31-83-1	TANK	REAGENT SLURRY TANK, 44' DIA X 63' TALL	1	EA	482,120		6,597	103.96	685,781	1,167,902
31-83-2	TANK	FILTER FEED TANK, 21' DIA X 33' TALL	1	EA	133,584		1,880	103.96	195,434	329,018
31-83-3	TANK	RECLAIM WATER TANK, 41' DIA X 66' TALL	1	EA	455,960		6,000	103.96	623,785	1,079,745
31-83-4	TANK	MAKE-UP WATER TANK, 28.5' DIA X 43' TALL	1	EA	248,400		2,765	103.96	287,491	535,891
31-83-5	TANK	INFLUENT STORAGE TANK, 20' DIA X 15' TALL, CS	1	EA	151,248		2,074	103.96	215,561	366,809
31-83-6	TANK	WASTE WATER STORAGE TANK, 16' DIA X 24' TALL, FRP	1	EA	51,115		255	85.36	21,784	72,899
	31-83 Total				1,522,426		19,571		2,029,836	3,552,264

Print Date 10/9/2013 9:07 AM

Page 8 of 13

NPPDRH114\_0006421

ED\_005798\_00000590-00039

## Question 1

ESTIMATE NO. : 31250B  
 PROJECT NO. : 12681-012  
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NPPD  
 GERALD GENTLEMAN STATION UNIT 1&2 COMMON FACILITIES  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

SARGENT &amp; LUNDY

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
31-93	WATER TREATING									
31-93-1	FGD ZLD SYSTEM EQUIPMENT	QUOTE FROM AQUATECH	1	LT	5,147,940		38,950	85.91	3,346,161	8,494,101
31-93-2	FGD ZLD SYSTEM INTER-CONNECTING PIPE	QUOTE FROM AQUATECH	1	LT	504,288		3,815	85.91	327,787	832,075
31-93 Total					5,652,228		42,765		3,673,948	9,326,176
31 Total					42,860,594	162,000	276,062		24,127,160	67,149,754
33	<b>MATERIAL HANDLING EQUIPMENT</b>									
33-37	REAGENT HANDLING SYSTEM									
33-37-1	REAGENT HANDLING SYSTEM EQUIPMENT	BUGETARY QUOTE FROM R&S FOR ENGINEERING, PROCUREMENT, AND DELIVERY OF THE ITEMS LISTED BELOW	1	LS	7,448,754		56,100	83.25	4,670,325	12,119,079
33-37-2	FROZEN LIMESTONE CRACKERS	1000 TPH	2	EA	346,698		991	83.25	82,500	429,198
33-37-3	FROZEN LIMESTONE CRACKERS	400 TPH	2	EA	325,686		931	83.25	77,500	403,186
33-37 Total					8,121,138		58,022		4,830,325	12,951,463
33 Total					8,121,138		58,022		4,830,325	12,951,463
34-37-4	FROZEN LIMESTONE CRACKER MOTORS	75 HP MOTOR - INSTALLATION INCLUDED WITH THE CRACKERS	4	EA	42,024			72.95		42,024
34-37 Total					42,024					42,024
34 Total					42,024					42,024
33-38	GYPSUM HANDLING SYSTEM									
33-38-1	GYPSUM HANDLING SYSTEM EQUIPMENT	BUGETARY QUOTE FROM R&S FOR ENGINEERING, PROCUREMENT, AND DELIVERY OF THE ITEMS LISTED BELOW	1	LS	3,046,740		28,829	83.25	2,400,000	5,446,740
33-38 Total					3,046,740		28,829		2,400,000	5,446,740
33-47	CAR THAWING EQUIPMENT									
33-47-1	CAR THAWING EQUIPMENT		1	LS	772,800		4,070	85.91	349,854	1,122,454
33-47-2	VENTILATION	ALLOWANCE	1	LS	55,200		110	85.91	9,450	64,650
33-47 Total					828,000		4,180		359,104	1,187,104
33-53	RAILROAD									
33-53-1	NEW RAILROAD TRAKS & SWITCHES, AND MODIFICATIONS OF EXISTING TRACKS	BUDGETARY QUOTE FROM NPPD	1	LS	11,212,276			85.91		11,212,276
33-53-2	CONSTRUCTION COST FOR REAGENT TRACK BRIDGE	BUDGETARY QUOTE FROM NPPD	1	LS	1,109,009			85.91		1,109,009
33-53 Total					12,321,285					12,321,285
33-99	MAINTENANCE EQUIPMENT									

Print Date 10/9/2013 9:07 AM

Page 9 of 13

NPPDRH114\_0006422

ED\_005798\_00000590-00040



## Question 1

ESTIMATE NO. : 31250B  
 PROJECT NO. : 12681-012  
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 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1&2 COMMON FACILITIES  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
33-99-1	BULLDOZER		1	EA	1,104,000			85.91		1,104,000
33-99-2	FRONT END LOADER		1	EA	1,656,000			85.91		1,656,000
33-99 Total					2,760,000					2,760,000
33 Total					18,956,025		33,509		2,759,104	21,715,129
34	<b>HVAC</b>									
34-99	HVAC									
34-99-1	HVAC	ALLOWANCE, REAGENT PREP BUILDING	1	LS	828,000		12,354	80.72	997,223	1,825,223
34-99-2	HVAC	ALLOWANCE, DEWATERING BUILDING	1	LS	496,800		7,413	80.72	598,369	1,095,169
34-99-3	HVAC	ALLOWANCE, ZLD BUILDING	15,000	SF		300,000	2,475	80.72	199,782	499,782
34-99-4	HVAC	ALLOWANCE, NEW WAREHOUSE	12,000	SF		240,000	132	80.72	10,655	250,655
34-99 Total					1,324,800	540,000	22,374		1,806,029	3,670,829
34 Total					1,324,800	540,000	22,374		1,806,029	3,670,829
35	<b>PIPING</b>									
35-13	LARGE BORE PIPING									
35-13-1	12" CS SCH 40 PIPING	ABOVE GROUND PIPING	160	LF		22,544	493	93.61	46,127	68,671
35-13-2	12" CS SCH 40 PIPING	BURIED PIPING	12,030	LF		1,360,593	18,923	93.61	1,771,400	3,131,993
35-13-3	6" HDPE SDR 9 PIPING	BURIED PIPING	1,530	LF		11,475	1,161	89.10	103,469	114,944
35-13-4	4" CS SCH 40 PIPING	ABOVE GROUND PIPING	60	LF		1,356	98	93.61	9,144	10,500
35-13-5	3" CS SCH 80 PIPING	ABOVE GROUND PIPING	680	LF		19,360	1,462	93.61	136,826	156,186
35-13-6	3" CS SCH 40 PIPING	ABOVE GROUND PIPING	1,460	LF		25,550	2,152	93.61	201,452	227,002
35-13-7	3" CS/RL PIPING	ABOVE GROUND PIPING	260	LF		10,530	97	93.61	9,103	19,633
35-13-8	3" FRP PIPING	ABOVE GROUND PIPING	130	LF		6,513	47	93.61	4,417	10,930
35-13-9	3" CS SCH 40 PIPING	BURIED PIPING	1,760	LF		29,920	1,297	93.61	121,423	151,343
35-13-10	3" HDPE SDR 9 PIPING	BURIED PIPING	1,630	LF		4,075	1,363	89.10	121,415	125,490
35-13-11	2.5" FRP PIPING	ABOVE GROUND PIPING	320	LF		16,032	116	93.61	10,874	26,906
35-13-12	VALVES	10" GATE VALVE , FLANGED, 150LB	1	EA		4,623	15	93.61	1,421	6,044
35-13-13	VALVES	6" CS GATE VALVE , FLANGED, 150LB	2	EA		3,887	19	93.61	1,792	5,679
35-13-14	VALVES	4" CS GATE VALVE , FLANGED, 150LB	3	EA		3,940	24	93.61	2,224	6,164
35-13-15	VALVES	3" CS GATE VALVE	1	EA		1,051	9	93.61	803	1,854
35-13-16	VALVES	3" FOR SERVICE WATER ISOLATION	40	EA		42,024	343	93.61	32,127	74,151
35-13-17	VALVES	3" FOR SERVICE AIR ISOLATION	40	EA		42,024	343	93.61	32,127	74,151
35-13 Total						1,605,496	27,962		2,606,146	4,211,642

Print Date 10/9/2013 9:07 AM

Page 10 of 13

NPPDRH114\_0006423

ED\_005798\_00000590-00041

## Question 1

ESTIMATE NO. : 31250B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1&2 COMMON FACILITIES  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
35-15	SMALL BORE PIPING									
35-15-1	2" CS SCH 60 PIPING	ABOVE GROUND PIPING	4,020	LF		85,626	5,572	93.61	521,569	607,195
35-15-4	2" SS 304 SCH 40 PIPING	ABOVE GROUND PIPING	600	LF		32,760	950	93.61	88,967	121,727
35-15-5	2" CS SCH 80 PIPING	BURIED PIPING	100	LF		1,710	79	93.61	7,414	9,124
35-15-6	1.5" SS 304 PIPING	ABOVE GROUND PIPING	1,400	LF		53,060	2,033	93.61	190,290	243,350
35-15-7	1.5" SS 304 PIPING	BURIED PIPING	700	LF		21,980	1,016	93.61	95,145	117,125
35-15-8	1" SS 304 SCH 40 PIPING	ABOVE GROUND PIPING	650	LF		13,130	808	93.61	75,832	88,962
35-15-9	VALVES	2" SS VALVES FOR INSTRUMENT AIR ISOLATION	200	EA		177,551	1,716	93.61	160,635	338,186
35-15-10	VALVES	2" CS GATE VALVE , 150LB	2	EA		1,492	17	93.61	1,606	3,098
35-15-11	DRAINAGE PIPING		600	LF		18,547	660	89.10	58,806	77,353
35-15-12	MAKE-UP WELL PIPING			LF				89.10		
35-15 Total						405,856	12,852		1,200,064	1,605,921
35 Total						2,011,353	40,814		3,606,210	5,617,563
36	INSULATION									
36-15	INSULATION, PIPE									
36-15-1	INSULATION, PIPE	1" CALSIL INSULATION WITH COVER, FOR 3" PIPE	880	LF		6,508	301	60.80	18,274	24,782
36-15-2	INSULATION, PIPE	1" CALSIL INSULATION WITH COVER, FOR 2" PIPE	1,500	LF		9,518	473	60.80	28,742	38,259
36-15 Total						16,025	773		47,016	63,041
36 Total						16,025	773		47,016	63,041
41	ELECTRICAL EQUIPMENT									
41-33	HEAT TRACING									
41-33-1	HEAT TRACING	HEAT TRACE SYSTEM, 10 WATT/FT, FOR 3" PIPE	680	LF		17,679	232	91.32	21,215	38,895
41-33-2	HEAT TRACING	HEAT TRACE SYSTEM, 10 WATT/FT, FOR 2" PIPE	1,500	LF		29,865	347	91.32	31,642	61,507
41-33 Total						47,544	579		52,858	100,402
41-37	LIGHTING ACCESSORY (FIXTURE)									
41-37-1	LIGHTING ACCESSORY (FIXTURE)	ALLOWANCE, REAGENT PREP BUILDING	1	LS	396,400		11,153	91.32	1,018,483	1,404,883
41-37-2	LIGHTING ACCESSORY (FIXTURE)	ALLOWANCE, DEWATERING BUILDING	1	LS	496,800		6,892	91.32	611,150	1,107,950
41-37-3	LIGHTING ACCESSORY (FIXTURE)	ALLOWANCE, ZLD BUILDING	15,000	SF		150,000	2,475	91.32	226,017	376,017
41-37-4	LIGHTING ACCESSORY (FIXTURE)	ALLOWANCE, NEW WAREHOUSE	12,000	SF		120,000	132	91.32	12,054	132,054
41-37-5	LIGHTING ACCESSORY (FIXTURE)	ALLOWANCE, CAR THAWING SHED	1	LT		31,518	550	91.32	50,226	81,744
41-37 Total						883,200	301,518	21,002	1,917,930	3,102,648

Print Date 10/9/2013 9:07 AM

Page 11 of 13

NPPDRH114\_0006424

ED\_005798\_00000590-00042

## Question 1

ESTIMATE NO. : 31250B		NPPD				SARGENT & LUNDY				
PROJECT NO. : 12681-012		GERALD GENTLEMAN STATION UNIT 1&2 COMMON FACILITIES								
ISSUE DATE : 10/09/2013		WET FGD								
PREP/REV : AT/BJD		CONCEPTUAL COST ESTIMATE								
APPROVED : MNO										
PRICE LEVEL: 2013		LOCATION: Omaha, NE		WAGE RATE: 13NEOMA		PRODUCTIVITY FACTOR: 1.1				
CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
41-41	ELECTRICAL MISCELLANEOUS	ALL OTHER ELECTRICAL WORK INCLUDED IN AUX POWER & FAN ESTIMATE	1	EA				91.32		
41-41 Total										
41 Total					883,200	349,062	21,581		1,970,788	3,203,050
44	<b>CONTROL &amp; INSTRUMENTATION</b>									
44-13	CONTROL SYSTEM									
44-13-1	DCS I/O POINTS		400	EA	420,240		594	79.39	47,158	467,398
44-13-2	BOP INSTRUMENTS & RACKS		1	LT	157,590		2,475	79.39	196,490	354,080
44-13-3	CEMS		2	EA	735,420		2,200	79.39	174,658	910,078
44-13 Total					1,313,250		5,269		418,306	1,731,556
44 Total					1,313,250		5,269		418,306	1,731,556
60	<b>CONSTRUCTION EQUIPMENT SUPPLEMENT</b>									
60-10	CONSTRUCTION EQUIPMENT SUPPLEMENT		1	EA				85.91		
60-10 Total										
60 Total										
90	SUBTOTAL DIRECT & CONSTRUCTION INDIRECT COST				75,268,950	22,244,801	723,829		62,236,627	159,750,378
91	OTHER DIRECT & CONSTRUCTION INDIRECT COST									
91-1	SCAFFOLDING - % of ACCT NO. 90		2.5	%					2,112,036	2,112,036
91-2	COST DUE TO OVERTIME WORKING 5 -10 HOUR DAYS		1.0	EA			62,942		8,969,804	8,969,804
91-3	PER DIEM		10.0	\$/HR					7,238,290	7,238,290
91-4	CONSUMABLES - % of ACCT NO. 90		0.5	%					422,407	422,407
91-5	FREIGHT ON MATERIAL - % of ACCT NO. 90		5.0	%		1,112,240				1,112,240
91-6	FREIGHT ON EQUIPMENT - % of ACCT NO. 90		5.0	%	3,763,448					3,763,448
91-7	SALES TAX - % of ACCT NO. 90 MATERIAL & EQUIPMENT SHOWN ON MATERIAL COLUMN		5.5	%		5,363,256				5,363,256
91-8	MOBILIZATION/DEMOLITION - NOT INCLUDED	INCLUDED WITH WAGE RATES		%						
91-9	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE - % of ACCT NO. 90, 91-1 TO 91-8		10.0	%		2,872,030			8,097,916	10,969,946
91-10	CONTRACTOR'S PROFIT - % of ACCT NO. 90, 91-1 TO 91-8		5.0	%		1,436,015			4,048,958	5,484,973
91 - SUBTOTAL					3,763,448	10,783,541			30,869,411	45,436,400
92	TOTAL DIRECT & CONSTRUCTION INDIRECT COST				79,032,398	33,028,342	786,771		93,126,038	205,186,778
93	INDIRECT COST									

Print Date 10/9/2013 9:07 AM

Page 12 of 13

NPPDRH114\_0006425

ED\_005798\_00000590-00043

## Question 1

ESTIMATE NO. : 31250B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD  
 GERALD GENTLEMAN STATION UNIT 1&2 COMMON FACILITIES  
 WET FGD  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
93-1	ENGINEERING, PROCUREMENT, & PROJECT SERVICES - UNIT 1		1.0	LS						12,600,000
93-2	ENGINEERING, PROCUREMENT, & PROJECT SERVICES - UNIT 2		1.0	LS						8,820,000
93-3	ENGINEERING, PROCUREMENT, & PROJECT SERVICES FOR AUX POWER AND ID FANS - UNIT 1		1.0	LS						1,890,000
93-4	ENGINEERING, PROCUREMENT, & PROJECT SERVICES FOR AUX POWER AND ID FANS - UNIT 2		1.0	LS						1,260,000
93-5	CONSTRUCTION MANAGEMENT SUPPORT - % of ACCT NO. 92		1.5	%						3,077,802
93-6	S-U / COMMISSIONING - % of ACCT NO. 92		1.0	%						2,051,868
93-7	SPARE PARTS - % of ACCT NO. 92 EQUIPMENT		3.0	%						2,370,972
93-8	OWNERS ENGINEERING COST - UNIT 1		1.0	LS						1,980,000
93-9	OWNERS ENGINEERING COST - UNIT 2		1.0	LS						1,452,000
93-10	OWNERS BOND FEES @ 2.5% OF \$200,000,000		1.0	LS						5,000,000
93-11	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4		2.0	%						4,745,148
93-12	EPC FEE - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4		15.0	%						35,588,613
93 - TOTAL										80,836,403
94	TOTAL ESCALATION									38,410,754
94-1	ESCALATION ON EQUIPMENT - % of ACCT NO. 92		11.2	%	8,874,950					8,874,950
94-2	ESCALATION ON MATERIAL - % of ACCT NO. 92		12.6	%		4,164,690				4,164,690
94-3	ESCALATION ON LABOR - % of ACCT NO. 92		16.3	%				15,175,306		15,175,306
94-4	ESCALATION ON INDIRECT - % of ACCT NO. 93		12.8	%						10,195,809
95	TOTAL CONTINGENCY									64,886,737
95-1	CONTINGENCY ON EQUIPMENT - % of ACCT NO. 92, 94.1		20.0	%	17,581,470					17,581,470
95-2	CONTINGENCY ON MATERIAL - % of ACCT NO. 92, 94.2		20.0	%		7,438,607				7,438,607
95-3	CONTINGENCY ON LABOR - % of ACCT NO. 92, 94.3		20.0	%				21,660,269		21,660,269
95-4	CONTINGENCY ON INDIRECT - % of ACCT NO. 93, 94.4		20.0	%						18,206,442
96	TOTAL CONSTRUCTION COST									389,320,722
97	INTEREST DURING CONSTRUCTION ( COMPOUNDED MONTHLY)									76,682,880
98	TOTAL PROJECT COST									466,003,602

ESTIMATE NO. : 31251B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT, FFS/BJD  
 APPROVED :MNO

SARGENT & LUNDY

NPPD GERALD GENTLEMAN STATION  
 WET FGD - AUX POWER AND BOOSTER FANS  
 CONCEPTUAL COST ESTIMATE

CODE OF ACCOUNT	DESCRIPTION A	EQUIPMENT COST	MATERIAL COST	LABOR COST	TOTAL COST
21 Total	CIVIL WORK	321,300	49,333	76,842	447,475
22 Total	CONCRETE		900,312	2,073,036	2,973,348
23 Total	STEEL		112,887	177,480	290,367
24 Total	ARCHITECTURAL	3,198,550		318,209	3,516,760
31 Total	MECHANICAL EQUIPMENT	11,388,504		1,323,014	12,711,518
41 Total	ELECTRICAL EQUIPMENT	14,965,942	145,301	4,035,480	19,146,723
42 Total	RACEWAY, CABLE TRAY, & CONDUIT		1,738,271	4,748,142	6,486,413
43 Total	CONTROL & INSTRUMENTATION	84,048	2,411,324	6,215,222	8,710,594
51 Total	SUBSTATION, SWITCHYARD & TRANSMISSION LINE	1,506,533	57,915	435,110	1,999,559
60 Total	CONSTRUCTION EQUIPMENT SUPPLEMENT	297,000		154,982	451,982
90	SUBTOTAL DIRECT & CONSTRUCTION INDIRECT COST	31,761,877	5,415,343	19,557,517	56,734,737
91	OTHER DIRECT & CONSTRUCTION INDIRECT COST				
91-1	SCAFFOLDING - % of ACCT NO. 90			624,322	624,322
91-2	COST DUE TO OVERTIME WORKING 5 -10 HOUR DAYS			2,849,678	2,849,678
91-3	PER DIEM			2,630,711	2,630,711
91-4	CONSUMABLES - % of ACCT NO. 90			124,864	124,864
91-5	FREIGHT ON MATERIAL - % of ACCT NO. 90		270,767		270,767
91-6	FREIGHT ON EQUIPMENT - % of ACCT NO. 90	1,588,094			1,588,094
91-7	SALES TAX - % of ACCT NO. 90 MATERIAL & EQUIPMENT SHOWN ON MATERIAL COLUMN		2,044,747		2,044,747
91-8	MOBILIZATION/DEMobilIZATION - NOT INCLUDED				
91-9	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE - % of ACCT NO. 90, 91-1 TO 91-8		773,086	2,578,709	3,351,795
91-10	CONTRACTOR'S PROFIT - % of ACCT NO. 90, 91-1 TO 91-8		386,543	1,289,355	1,675,897
	91 - SUBTOTAL	1,588,094	3,475,143	10,097,639	15,160,876
92	TOTAL DIRECT & CONSTRUCTION INDIRECT COST	33,349,971	8,890,486	29,655,156	71,895,613
93	INDIRECT COST				
93-1	ENGINEERING, PROCUREMENT, & PROJECT SERVICES - NOT INCLUDED				
93-2	CONSTRUCTION MANAGEMENT SUPPORT - % of ACCT NO. 92				1,078,434
93-3	S-U / COMMISSIONING - % of ACCT NO. 92				718,956
93-4	SPARE PARTS - % of ACCT NO. 92 EQUIPMENT				1,000,499
93-5	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4				1,493,870
93-6	EPC FEE - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4				11,204,025
	93 - TOTAL				15,495,785
94	TOTAL ESCALATION				11,652,986
94-1	ESCALATION ON EQUIPMENT - % of ACCT NO. 92	3,745,038			3,745,038
94-2	ESCALATION ON MATERIAL - % of ACCT NO. 92		1,121,041		1,121,041
94-3	ESCALATION ON LABOR - % of ACCT NO. 92			4,832,441	4,832,441
94-4	ESCALATION ON INDIRECT - % of ACCT NO. 93				1,954,467
95	TOTAL CONTINGENCY				19,808,877
95-1	CONTINGENCY ON EQUIPMENT - % of ACCT NO. 92, 94.1	7,419,002			7,419,002
95-2	CONTINGENCY ON MATERIAL - % of ACCT NO. 92, 94.2		2,002,305		2,002,305
95-3	CONTINGENCY ON LABOR - % of ACCT NO. 92, 94.3			6,897,519	6,897,519
95-4	CONTINGENCY ON INDIRECT - % of ACCT NO. 93, 94.4				3,490,050
96	TOTAL CONSTRUCTION COST				118,853,261
97	INTEREST DURING CONSTRUCTION ( COMPOUNDED MONTHLY)				23,504,001
98	TOTAL PROJECT COST				142,357,263

ESTIMATE NO. : 31251B  
PROJECT NO. : 12681-012  
ISSUE DATE : 10/09/2013  
PREP/REV : AT, FFS/BJD  
APPROVED :MNO

SARGENT & LUNDY

NPPD GERALD GENTLEMAN STATION  
WET FGD - AUX POWER AND BOOSTER FANS  
CONCEPTUAL COST ESTIMATE

CODE OF ACCOUNT	DESCRIPTION A	EQUIPMENT COST	MATERIAL COST	LABOR COST	TOTAL COST
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## Question 1

ESTIMATE NO. : 31251B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT, FFS/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD GERALD GENTLEMAN STATION  
 WET FGD - AUX POWER AND BOOSTER FANS  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
21	<b>CIVIL WORK</b>		1.1	1.051						
21-53	PILING & CAISSON									
21-53-1	AUGER CAST PILES 16" DIA. X 70' LONG	BOOSTER FAN FOUNDATION	120	EA	321,300			110.01		321,300
21-53-2	CAISSONS	4"W X 30"L - "H" FRAME STRUCTURE( 2 LEGGED)	4	EA		16,148	242	110.01	26,622	42,770
21-53-3	CAISSONS	4"W X 30"L - 70' STEEL POLE (1 LEGGED)	1	EA		4,037	61	110.01	6,656	10,693
21-53-4	CAISSONS	4"W X 15'L - 3 PHASE DISCONNECT SWITCHES (2) LEGGED	4	EA		8,072	119	110.01	13,069	21,141
21-53-5	CAISSONS	3"W X 12'L - SINGLE PHASE DISCONNECT SWITCHES	4	EA		4,276	57	110.01	6,293	10,569
21-53-6	CAISSONS	2"W X 7'L - 5" ALUMINUM BUS	50	EA		16,800	220	110.01	24,202	41,002
	21-53 Total				321,300	49,333	699		76,842	447,475
	21 Total				321,300	49,333	699		76,842	447,475
22	<b>CONCRETE</b>									
22-13	CONCRETE									
22-13-1	CONCRETE FOUNDATIONS FOR MAIN ELECTRICAL EQUIPMENT BUILDING	15' X 95' =1425 SF	2	EA		50,488	1,250	69.20	86,472	136,960
22-13-2	CONCRETE FOUNDATIONS FOR REAG. PREP ELECTRICAL EQUIPMENT BUILDING	15"W X 40'LX15' H	1	EA		25,913	614	69.20	42,475	68,388
22-13-3	CONCRETE	BOOSTER FAN FOUNDATIONS	1,200	CY		276,000	9,900	69.20	685,080	961,080
22-13-4	CONCRETE	UNLOADING BUILDING ELECTRICAL ROOM	1,200	CY		276,000	9,900	69.20	685,080	961,080
22-13-5	CONCRETE FOUNDATIONS FOR 230KV BREAKERS	12"W X 14'L X 3'D	6	EA		25,760	924	110.01	101,649	127,409
22-13-6	FOUNDATION FOR 45/60MVA -230KV TRANSFORMERS	32"W X 60'L X 3'D	2	EA		96,133	2,704	59.24	157,469	255,603
22-13-7	FOUNDATION FOR 45/60MVA -24KV TRANSFORMERS	24"W X 52'L X 3'D	2	EA		63,787	1,894	58.24	110,318	174,105
22-13-8	FOUNDATION FOR 1000/1500KVA TRANSFORMER	12"W X 14'L X 2'D	8	EA		22,898	1,074	58.24	62,526	85,424
22-13-9	FOUNDATION FOR 2000/2666KVA TRANSFORMER	15"W X 20'L X 3'D	8	EA		61,333	2,438	58.24	141,966	203,299
	22-13 Total					900,312	30,697		2,073,036	2,973,348
	22 Total					900,312	30,697		2,073,036	2,973,348
23	<b>STEEL</b>									
23-25	ROLLED SHAPE									
23-25-1	ROLLED SHAPE (SERVICE PLATFORM WITH HANDRAIL & PAINTING) FOR REAG REP BLDG	75'+390'+265'=730 SF	730	SF		34,512	683	86.03	58,720	93,232
23-25-2	ROLLED SHAPE (SERVICE PLATFORM WITH HANDRAIL & PAINTING) FOR MAIN ELEC BLDG	100'+300'=400 SF	400	SF		18,911	374	86.03	32,175	51,086
23-25-3	ROLLED SHAPE (10' W STAIRS & PAINTING) FOR REAG REP BLDG	10'W STAIRS (9 STEPS)	9	EA		4,728	50	86.03	4,258	8,986
23-25-4	ROLLED SHAPE (10' W STAIRS & PAINTING) FOR MAIN ELEC BLDG	10'W STAIRS (9 STEPS)	9	EA		4,728	50	86.03	4,258	8,986

Print Date 10/9/2013 9:21 AM

Page 3 of 10

NPPDRH114\_0006429

ED\_005798\_00000590-00047

## Question 1

ESTIMATE NO. : 31251B  
 PROJECT NO. : 12681-012  
 ISSUE DATE : 10/09/2013  
 PREP/REV : AT, FFS/BJD  
 APPROVED : MNO

SARGENT &amp; LUNDY

NPPD GERALD GENTLEMAN STATION  
 WET FGD - AUX POWER AND BOOSTER FANS  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
23-25-5	ROLLED SHAPE (5' W STAIRS & PAINTING) FOR REAG REP BLDG	5'W STAIRS (9 STEPS)	9	EA		3,782	30	86.03	2,556	6,337
23-25-6	ROLLED SHAPE (5' W STAIRS & PAINTING) FOR MAIN ELEC BLDG	5'W STAIRS (9 STEPS)	9	EA		3,782	30	86.03	2,555	6,337
23-25-7	SIGN & FOR NEW PRE-ENGINEERED BUILDINGS	ALLOWANCE	1	LT		5,253	26	86.03	2,271	7,524
23-25-8	STRUCTURE STEEL SUPPORT FOR DISCONNECT SWITCHES	SINGLE PHASE	4	EA		3,152	53	107.82	5,693	8,845
23-25-9	STRUCTURE STEEL SUPPORT FOR 5" ALUMINUM BUS		50	EA		31,518	550	107.82	59,301	90,819
23-25-10	STRUCTURE STEEL SUPPORT FOR DISCONNECT SWITCHES	3 PHASE	2	EA		2,521	53	107.82	5,693	8,214
23-25 Total						112,887	1,897		177,480	290,367
23 Total						112,887	1,897		177,480	290,367
24	<b>ARCHITECTURAL</b>									
24-35	PRE-ENGINEERED BUILDING (PREFABRICATED)									
24-35-1	MAIN ELECTRICAL BUILDING W/ HVAC, LIGHTING (MCC, SWGR, CONTROL PANELS PRICED SEPARATELY)	15' X 95' =1425 SF	2	EA	2,064,491		1,568	107.82	169,008	2,233,499
24-35-2	REAGENT PREP ELECTRICAL BUILDING W/ HVAC, LIGHTING, UPS W/BATTERY & CHARGER, PHONE JACK, AUXILIARY POWER MODIFICATION	22'W X 68' L=1498SF	1	EA	809,424		823	107.82	88,714	898,139
24-35-3	UNLOADING BUILDING ELECTRICAL ROOM	15'W X 40'LX15' H	600	SF	324,635		561	107.82	60,487	385,122
24-35 Total						3,198,550	2,951		318,209	3,516,760
24 Total						3,198,550	2,951		318,209	3,516,760
31	<b>MECHANICAL EQUIPMENT</b>									
31-35	FANS & ACCESSORIES (EXCL HVAC)									
31-35-1	BOOSTER FANS - (4 FANS) 2 FANS PER UNIT. (4 MOTORS) 2 MOTOR PER UNIT	2X100% AXIAL FANS, INCLUDING MOTORS 7.2KV 3 PHASE - VENDOR QUOTE FROM TLT-BABCOCK	4	EA	11,388,504		15,400	85.91	1,323,014	12,711,518
31-35-2	MECHANICAL EQUIPMENT COST FOR FGD ZLD SYSTEM INCLUDED IN ESTIMATE 31250A	(ELECTRICAL CONNECTION TO VARIOUS COMPONENTS LISTED UNDER AQUATECH QUOTE INCLUDED IN ELECTRICAL SECTION								
31-35 Total						11,388,504	15,400		1,323,014	12,711,518
31 Total						11,388,504	15,400		1,323,014	12,711,518
41	<b>ELECTRICAL EQUIPMENT</b>									
41-13	BUS DUCT									
41-13-1	ISOLATED PHASE BUS DUCT	24KV, 2000AMP	300	LF	238,591		1,848	91.32	168,759	407,351
41-13-2	3000A - 15KV CABLE BUS	8 (1500')	12,000	LF	3,782,160		42,768	58.24	2,490,808	6,272,968
41-13 Total						4,020,751	44,616		2,659,568	6,680,319



## Question 1

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SARGENT &amp; LUNDY

NPPD GERALD GENTLEMAN STATION  
 WET FGD - AUX POWER AND BOOSTER FANS  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
41-31	GROUNDING									
41-31-1	3/4"- 20' LONG COPPER GND ROD		46	EA		9,666	101	91.32	9,242	18,907
41-31-2	# 500 BARE COPPER WIRE		2,300	LF		26,450	438	91.32	39,970	66,420
41-31-3	# 4/0 BARE COPPER WIRE		4,600	LF		31,464	607	91.32	55,450	86,914
41-31-4	CADWELD SPLICE & TO #500 & #4/0 GND WIRE			EA				91.32		
41-31-5	GROUNDING	500 KCM BARE COPPER GNV CAR THAWING SHED	400	LF		4,600	304	91.32	27,725	32,325
41-31-6	TESTING	TEST & DOCUMENTATION	1	LT			159	91.32	14,562	14,562
	41-31 Total					72,180	1,609		146,948	219,128
41-37	LIGHTING ACCESSORY (FIXTURE)									
41-37-1	PERIMETER & ROADWAY LIGHTING	400W, 277V + POLE & CONCRETE BASE	20	EA	105,060		176	91.32	16,072	121,132
41-37-2	LIGHTING TRANSFORMER	45KVA, 3PHASE, 480V-277/120V	4	EA	31,518		141	91.32	12,858	44,376
41-37-3	LIGHTING & RECEPTACLE PANELS	200A, 277/120V + 42 C BREAKERS	4	EA	5,043		70	91.32	6,429	11,472
41-37-4	CONDUIT & WIRE	ALLOWANCE	1	LT		52,530	2,200	91.32	200,904	253,434
41-37-5	MISCELLANEOUS LIGHTING HDWR	PHOTO CELL/LTG CONTACTORS	1	LT		10,505	550	91.32	50,226	60,732
	41-37 Total				141,621	63,036	3,137		286,489	491,146
41-45	MOTOR CONTROL CENTER (MCC)									
41-45-1	MCC-1200A, 480V, 7VER. SEC. WITH AUXILIARY POWER MODIFICATIONS		4	EA	250,043			91.32		250,043
41-45-2	MCC-600A, 480V, 7VER. SEC. WITH AUXILIARY POWER MODIFICATIONS		6	EA	308,876			91.32		308,876
41-45-3	MCC-600A, 480V, 7VER. SEC. WITH AUXILIARY POWER MODIFICATIONS		2	EA	102,959		123	91.32	11,251	114,209
41-45-4	TESTING & DEBUG /STARTUP	TEST & DOCUMENTATION	1	LT			26	91.32	2,411	2,411
	41-45 Total				661,878		150		13,661	675,539
41-47	PANEL: CONTROL, DISTRIBUTION, & RELAY									
41-47-1	CIRCUIT BREAKER	7.2 KV CT, CAR THAWING SHED	4	EA	189,108		352	72.95	25,678	214,786
	41-47 Total				189,108		352		25,678	214,786
41-51	POWER TRANSFORMER									
41-51-1	RATs (START UP XFMR)	45/60MVA, 230KV-7.2/7.2KV	2	EA	3,151,900		4,840	66.87	323,651	3,475,451
41-51-2	UAT (UNIT AUX XFMR)	45/60MVA, 24KV-7.2/7.2KV	2	EA	2,311,320		3,850	66.87	257,450	2,568,770
41-51-3	7.2KV-480V- 1000/1500KVA , W/AUXILIARY POWER	1000/1500KVA- 7200/480V XFMR	8	EA	714,408		1,760	66.87	117,691	832,099
41-51-4	7.2KV-480V- 2000/2666KVA , W/AUXILIARY POWER	2000/2666KVA- 7200/480V XFMR	2	EA	315,180		660	66.87	44,134	359,314
41-51-5	TESTING	TEST & DOCUMENTATION	1	LT			493	91.32	45,002	45,002

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NPPD GERALD GENTLEMAN STATION  
 WET FGD - AUX POWER AND BOOSTER FANS  
 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
41-51-6	POWER TRANSFORMER	7.2 KV/ 480 V OIL FILLED TRANSFORMERS 1500/2000 KVA, CAR THAWING SHED	4	EA	378,216		660	72.95	48,147	426,363
41-51 Total					6,870,924		12,263		836,075	7,706,999
41-55	SWITCHGEAR									
41-55-1	SWITCHGEAR	7.2KV, PRE-INSTALLED IN NEW 15'W X 95'L MAIN BLDG	4	EA	1,766,400			66.87		1,766,400
41-55-3	SWITCHGEAR	480V, FGD PRE-INSTALLED - IN NEW 15'W X 95'L MAIN BLDG	2	EA	331,200			66.87		331,200
41-55-4	SWITCHGEAR	7.2KV, PRE-INSTALLED IN 22'W X 68'L REAGENT BUILDING	1	EA	441,600			66.87		441,600
41-55-5	SWITCHGEAR	480V, INSTALLED IN 22'W X 68'L REAGENT BUILDING	1	EA	165,600			66.87		165,600
41-55-6	SWITCHGEAR	480V, WASTE DIS INSTALLED IN 22'W X 68'L REAGENT BUILDING	1	EA	165,600			66.87		165,600
41-55-7	SWITCHGEAR	480V, INSTALLED IN LIME STONE RAIL CAR UNLOADING ELECTRICAL ROOM	1	EA	165,600		220	66.87	14,711	180,311
41-55-8	TEST	TEST & DOCUMENTATION	1	EA			158	66.87	10,592	10,592
41-55 Total					3,036,000		378		25,304	3,061,304
41-99	MISCELLANEOUS ELECTRICAL									
41-99-1	SUPPORT POLES	CAR THAWING SHED	6	EA	40,406		297	72.95	21,666	62,073
41-99-2	MISCELLANEOUS BUILDING ELECTRICAL	HYDROGEN BUILDING (40'X20'X15')	800	SF		10,066	220	91.32	20,090	30,176
41-99-3	MISCELLANEOUS BUILDING ELECTRICAL	TRANSFORMER OIL INTERCEPTORS ALLOWANCE	1	LT	5,253			91.32		5,253
41-99 Total					45,659	10,066	517		41,757	97,502
41 Total					14,965,942	145,301	63,022		4,035,480	19,146,723
42	RACEWAY, CABLE TRAY, & CONDUIT									
42-13	CABLE TRAY									
42-13-1	ALUMINUM CABLE TRAY	12" ALUMINUM CABLE TRAY	2,925	LF		69,323	3,571	64.91	231,821	301,144
42-13-2	ALUMINUM CABLE TRAY	18" ALUMINUM CABLE TRAY	2,475	LF		67,592	3,948	64.91	256,240	323,833
42-13-3	ALUMINUM CABLE TRAY	24" ALUMINUM CABLE TRAY	2,925	LF		90,938	5,631	64.91	365,484	456,422
42-13-4	ALUMINUM CABLE TRAY	30" ALUMINUM CABLE TRAY	2,250	LF		78,120	4,826	64.91	313,272	391,392
42-13-5	ALUMINUM CABLE TRAY	36" ALUMINUM CABLE TRAY	3,825	LF		148,142	8,836	64.91	573,529	721,671
42-13 Total						454,115	26,812		1,740,346	2,194,481
42-15	CONDUIT									
42-15-1	RGS CONDUIT	3/4" RGS CONDUIT	28,800	LF		84,384	6,146	64.91	398,932	483,316
42-15-2	RGS CONDUIT	1" RGS CONDUIT	22,500	LF		94,725	5,915	64.91	383,959	478,684
42-15-3	RGS CONDUIT	2" RGS CONDUIT	13,500	LF		112,050	5,227	64.91	339,296	451,346

Print Date 10/9/2013 9:21 AM

Page 6 of 10

NPPDRH114\_0006432

ED\_005798\_00000590-00050

ESTIMATE NO. : 31251B  
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 CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

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42-15-4	RGS CONDUIT	3" RGS CONDUIT	9,900	LF		185,724	7,024	64.91	455,931	641,655
42-15-5	RGS CONDUIT	4" RGS CONDUIT	13,500	LF		374,085	11,964	64.91	777,878	1,151,963
42-15-6	RGS CONDUIT	5" RGS CONDUIT	5,100	LF		433,188	10,042	64.91	651,798	1,084,986
	42-15 Total					1,284,156	46,338		3,007,796	4,291,952
42-99	UNDERGROUND DUCT BANKS	NOT REQUIRED								
	42-99 Total									
	42 Total					1,738,271	73,150		4,748,142	6,466,413
43	<b>CONTROL &amp; INSTRUMENTATION</b>									
43-13	<b>CONTROL &amp; INSTRUMENT CABLE</b>									
43-13-1	6 STRAND FIBER OPTIC CABLE		7,500	LF		17,550	578	91.32	52,737	70,287
43-13-2	CAT5e CABLE		24,000	LF		7,680	713	91.32	65,063	72,773
43-13-3	1 PR #16 SHLD CABLE		18,000	LF		20,880	535	91.32	48,820	69,700
43-13-4	2 PR #16 SHLD CABLE		18,000	LF		46,980	634	91.32	57,860	104,840
43-13-5	8 PR #16 SHLD CHROM/CONST CABLE		18,000	LF		178,380	1,762	91.32	162,732	341,112
43-13-6	7/C # 14 AWG SH		10,000	LF		14,000	683	91.32	53,240	67,240
43-13-7	9/C # 14 AWG SH		12,000	LF		22,200	845	91.32	77,147	99,347
43-13-8	3/C # 14 AWG		22,000	LF		14,740	726	91.32	66,288	81,038
43-13-9	2/C # 14 AWG		25,000	LF		12,750	743	91.32	87,805	80,555
43-13-10	1/C # 14 AWG		35,000	LF		19,600	924	91.32	84,380	103,980
43-13-11	37/C # 16 AWG SH		15,000	LF		118,700	8,580	91.32	783,526	903,226
43-13-12	INSTRUMENT & CONTROL WIRE TERMINATIONS		1	LT		3,573	162	91.32	16,617	20,190
43-13-13	TEST	TEST & DOCUMENTATION	1	LT			562	91.32	51,356	51,356
	43-13 Total					478,033	17,365		1,587,611	2,065,644
43-15	<b>HIGH VOLTAGE POWER CABLE &amp; TERMINATION</b>									
43-15-1	HIGH VOLTAGE POWER CABLE	3/C 4/0 15 KV CABLE, CAR THAWING SHED	2,500	LF		71,000		91.32		71,000
	43-15 Total					71,000				71,000
43-17	<b>LOW VOLTAGE POWER CABLE &amp; TERMINATION</b>									
43-17-1	3/C # 750KCMIL - 600V		3,500	LF		220,500	2,657	91.32	242,592	463,092
43-17-2	3/C TRI # 500KCMIL - 600V		1,300	LF		44,850	987	91.32	90,105	134,955
43-17-3	3/C # 250KCMIL - 600V		3,500	LF		79,590	2,857	91.32	242,592	322,182
43-17-4	3/C # 4/0 AWG - 600V		3,700	LF		85,988	2,116	91.32	193,270	279,258
43-17-5	3/C # 1/0 AWG - 600V		3,700	LF		25,752	2,116	91.32	193,270	219,022
43-17-6	3/C # 6 AWG - 600V		12,100	LF		89,903	705	91.32	64,420	154,323
43-17-7	3/C # 8 AWG W/GND - 600V		13,200	LF		86,592	770	91.32	70,276	156,868
43-17-8	3/C # 10 AWG W/GND 600V		16,000	LF		20,800	792	91.32	72,325	93,125
43-17-9	3/C # 12 AWG 600V		37,000	LF		55,870	1,221	91.32	111,502	167,372
43-17-10	1/C # 12 AWG W/GND 600V		61,600	LF		11,704	1,016	91.32	92,818	104,522
43-17-11	600 VOLT POWER WIRE TERMINATION		1	LT		7,376	253	91.32	23,104	30,479

Print Date 10/9/2013 9:21 AM

Page 7 of 10

NPPDRH114\_0006433

ED\_005798\_00000590-00051

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PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
43-17-12	LOW VOLTAGE POWER CABLE	3/C #6 600V CABLE, CAR THAWING SHED	1,000	LF		7,430		91.32		7,430
43-17-13	TEST	TEST & DOCUMENTATION	1	LT			431	91.32	39,327	39,327
	43-17 Total					736,355	15,721		1,435,600	2,171,954
43	MEDIUM VOLTAGE POWER CABLE & TERMINATION									
43-21	18KV WIRE AND TERMINATION									
43-21-1	WIRE	1/C #750 KCMIL 8KV	24,000	LF		577,680	6,072	91.32	554,495	1,132,175
43-21-2	WIRE	1/C #500 KCMIL 8KV POWER FEEDS	15,600	LF		296,712	3,947	91.32	360,422	657,134
43-21-3	WIRE	1/C #4/0 KCMIL 8KV POWER FEEDS	18,000	LF		235,080	2,317	91.32	211,552	446,632
43-21-4	WIRE TERMINATION	# 750 - 8KV WIRE TERMINATION	96	EA		5,952	753	91.32	68,757	74,709
43-21-5	WIRE TERMINATION	# 500 - 8KV WIRE TERMINATION	72	EA		2,736	455	91.32	41,587	44,323
43-21-6	WIRE TERMINATION	# 4/0 - 8KV WIRE TERMINATION	432	EA		7,776	1,426	91.32	130,186	137,962
43-21-7	TESTING	TEST & DOCUMENTATION	1	LT			19,985	91.32	1,825,012	1,825,012
	43-21 Total					1,125,936	34,954		3,192,011	4,317,947
43-88	FROZEN LIMESTONE CRACKERS ELECTRICAL WORK	INCLUDING CABLES, CONDUITS, MCCS, ETC.	1	LS	84,048			91.32		84,048
	43-88 Total				84,048					84,048
	43 Total				84,048	2,411,324	68,060		6,215,222	8,710,594
51	SUBSTATION, SWITCHYARD & TRANSMISSION LINE									
51-13	CONDUCTOR & WIRE									
51-13-1	954 MCM ACSR		7,000	LF		17,060	2,695	67.60	182,182	199,262
51-13-2	# 954 ACSR TERMINATION		12	EA		30,000	106	67.60	7,139	37,139
51-13-3	TEST	TEST & DOCUMENTATION	1	LT			13	67.60	892	892
	51-13 Total					47,060	2,814		190,213	237,293
51-15	ELECTRICAL EQUIPMENT (EXCL. POWER TRANSFORMER)									
51-15-1	2000A, 230KV BREAKERS, 3PHASE- SF6		6	EA	993,600		990	91.32	90,407	1,084,007
51-15-2	2000A, 230KV DISCONNECT SWITCH, 3 PHASE	VERTICAL BREAK	2	EA	97,152		264	91.32	24,106	121,260
51-15-3	2000A, 230KV DISCONNECT SWITCH, 3 PHASE	CENTER BREAK	4	EA	131,420		440	91.32	40,161	171,601
51-15-4	230KV CTs		9	EA	90,000		59	91.32	5,424	95,424
51-15-5	5" ALUMINUM TUBULAR BUS		500	LF		9,875	220	91.32	20,090	29,965
51-15-6	5" TUBULAR BUS TERMINATION TO OH WIRE & TRANSFORMER		12	EA		960	33	91.32	3,014	3,974
	51-15 Total				1,312,172	10,835	2,006		163,224	1,506,232
51-27	TRANSMISSION TOWER, HARDWARE ASSEMBLY									
51-27-1	62.5FT "H" FRAME WITH 230KV, DOUBLE CIRCUIT INSULATORS	2 LEGGED STRUCTURE STEEL	2	EA	136,578		440	107.82	47,441	184,019

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PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

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51-27-2	70' FT STEEL POLE WITH 230KV INSULATORS (DOUBLE CIRCUIT CONDUCTORS)	STEEL POLE	1	EA	57,783		132	107.62	14,232	72,015
51-27 Total					194,361		572		61,673	256,034
51 Total					1,506,533	57,915	5,392		435,110	1,999,559
60	<b>CONSTRUCTION EQUIPMENT SUPPLEMENT</b>									
60-10-1	CONSTRUCTION EQUIPMENT SUPPLEMENT	MAN LIFT & CRAIN WITH OPERATOR (18 MONTHS @ 25000)	1	LT	270,000		1,804	85.91	154,982	424,982
60-10-2	CONSTRUCTION TEMPORARY POWER COST	ALLOWANCE (18 MONTHS @ \$1500)	1	LT	27,000			85.91		27,000
60-10 Total					297,000		1,804		154,982	451,982
60 Total					297,000		1,804		154,982	451,982
90	SUBTOTAL DIRECT & CONSTRUCTION INDIRECT COST				31,761,877	5,415,343	263,071		19,557,517	56,734,737
91	OTHER DIRECT & CONSTRUCTION INDIRECT COST									
91-1	SCAFFOLDING - % of ACCT NO. 90		2.5	%					624,322	624,322
91-2	COST DUE TO OVERTIME WORKING 5-10 HOUR DAYS		1.0	EA			22,876		2,849,678	2,849,678
91-3	PER DIEM		10.0	\$/HR					2,630,711	2,630,711
91-4	CONSUMABLES - % of ACCT NO. 90		0.5	%					124,864	124,864
91-5	FREIGHT ON MATERIAL - % of ACCT NO. 90		5.0	%		270,787				270,787
91-6	FREIGHT ON EQUIPMENT - % of ACCT NO. 90		5.0	%	1,588,094					1,588,094
91-7	SALES TAX - % of ACCT NO. 90 MATERIAL & EQUIPMENT SHOWN ON MATERIAL COLUMN		5.5	%		2,044,747				2,044,747
91-8	MOBILIZATION/DEMOBILIZATION - NOT INCLUDED	INCLUDED WITH WAGE RATES		%						
91-9	CONTRACTOR'S GENERAL AND ADMINISTRATION EXPENSE - % of ACCT NO. 90, 91-1 TO 91-8		10.0	%		773,086			2,576,709	3,351,795
91-10	CONTRACTOR'S PROFIT - % of ACCT NO. 90, 91-1 TO 91-8		5.0	%		366,543			1,289,355	1,675,897
91 - SUBTOTAL					1,588,094	3,475,143			10,097,639	15,160,876
92	TOTAL DIRECT & CONSTRUCTION INDIRECT COST				33,349,971	8,890,486	265,947		29,655,156	71,895,613
93	INDIRECT COST									
93-1	ENGINEERING, PROCUREMENT, & PROJECT SERVICES - NOT INCLUDED	INCLUDED IN UNIT 1&2 COMMON FACILITIES								
93-2	CONSTRUCTION MANAGEMENT SUPPORT - % of ACCT NO. 92		1.5	%						1,078,434
93-3	S-U / COMMISSIONING - % of ACCT NO. 92		1.0	%						718,956
93-4	SPARE PARTS - % of ACCT NO. 92 EQUIPMENT		3.0	%						1,000,499
93-5	OWNERS COST - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4		2.0	%						1,493,870

Print Date 10/9/2013 9:21 AM

Page 9 of 10

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Question 1

ESTIMATE NO. : 31251B  
PROJECT NO. : 12681-012  
ISSUE DATE : 10/09/2013  
PREP/REV : AT, FFS/BJD  
APPROVED : MNO

SARGENT & LUNDY

NPPD GERALD GENTLEMAN STATION  
WET FGD - AUX POWER AND BOOSTER FANS  
CONCEPTUAL COST ESTIMATE

PRICE LEVEL: 2013 LOCATION: Omaha, NE

WAGE RATE: 13NEOMA PRODUCTIVITY FACTOR: 1.1

CODE OF ACCOUNT	DESCRIPTION A	DESCRIPTION B	QTY	UM	EQUIPMENT COST	MATERIAL COST	MAN-HOURS	CREW WAGE RATE	LABOR COST	TOTAL COST
93-6	EPC FEE - % of ACCT NOS. 92, 93.1, 93.2, 93.3, 93.4		15.0	%						11,204,025
	93 - TOTAL									15,495,785
94	TOTAL ESCALATION									11,652,986
94-1	ESCALATION ON EQUIPMENT - % of ACCT NO. 92		11.2	%	3,745,038					3,745,038
94-2	ESCALATION ON MATERIAL - % of ACCT NO. 92		12.6	%		1,121,041				1,121,041
94-3	ESCALATION ON LABOR - % of ACCT NO. 92		16.3	%					4,832,441	4,832,441
94-4	ESCALATION ON INDIRECT - % of ACCT NO. 93		12.6	%						1,854,467
95	TOTAL CONTINGENCY									19,808,877
95-1	CONTINGENCY ON EQUIPMENT - % of ACCT NO. 92, 94.1		20.0	%	7,419,002					7,419,002
95-2	CONTINGENCY ON MATERIAL - % of ACCT NO. 92, 94.2		20.0	%		2,002,305				2,002,305
95-3	CONTINGENCY ON LABOR - % of ACCT NO. 92, 94.3		20.0	%					6,897,519	6,897,519
95-4	CONTINGENCY ON INDIRECT - % of ACCT NO. 93, 94.4		20.0	%						3,490,050
96	TOTAL CONSTRUCTION COST									118,853,261
97	INTEREST DURING CONSTRUCTION (COMPOUNDED MONTHLY)									23,504,001
98	TOTAL PROJECT COST									142,357,263

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